EAST INDIA (THE NIZAM, &c)

28

RETURN to an Address of the Honourable The House of Commons,
dated 7 March 1859;—*for*,

"COPY of MINUTE of Major *Moore*, then a Member of the Court of Directors of the East India Company, on the alleged DEBTS of His Highness the NIZAM to the British Government, dated the 7th day of November 1853, and of any other Minutes or Dissents of Members of the Court on the same subject:"

"Of MEMORANDUM of Colonel *A. Cotton*, on the Bombay Minutes of the Members of Council on a RAILWAY from *Beitkul* Harbour to *Hydrabad*, prepared in obedience to Orders of the Madras Government, on the 13th day of September 1858:"

"Of LETTER from Colonel *A. Cotton*, Commandant of Engineers, to *H. Forbes*, Esq., Acting Secretary to Government, dated the 5th day of March 1858:"

"Of REPORTS on the Harbour of *Beitkul*, in *Sedashighur Bay*, by Colonel *A. T. Cotton*, Madras Engineers, and Lieutenant *A. D. Taylor*, I.N.:"

"And, of REPORTS on the direct and indirect Effects of the GODAVERY and KISTNAH ANNICUTS in *Rajahmundry*, *Masulipatam*, *Guntoor*, &c., and the COLEROON ANNICUTS in *Tanjore* and *South Arcot*."

India Office,
14 April 1859.

J. W. KAYE,
Secretary in Political and Secret Departments.

(*Mr. John Benjamin Smith.*)

Ordered, by The House of Commons, *to be Printed*,
15 *April* 1859.

CONTENTS.

PAGE

No. 1.—MINUTE of Major Moore, then a Member of the Court of Directors of the East India Company, on the alleged Debts of his Highness the Nizam to the British Government, dated the 7th day of November 1853, and other Minutes or Dissents of Members of the Court on the same subject - - 3

No. 2.—Memorandum of Colonel A. Cotton, on the Bombay Minutes of the Members of Council, on a Railway from Beitkul Harbour to Hydrabad, prepared in obedience to Orders of the Madras Government, on the 13th day of September 1858 - - - - - - - - - - - - - 22

No. 3.—Reports on the Harbour of Beitkul, in Sedashigur Bay, by Colonel A. T. Cotton, Madras Engineers, and Lieutenant A. D. Taylor, I. N. - 52

No. 4.—Reports on the direct and indirect Effects of the Godavery and Krishna Annicuts in Rajahmundry, Masulpatam, Guntoor, &c., and the Coleroon Annicuts in Tanjore and South Arcot - - - - - - - - 84

— No. 1. —

COPY of MINUTE of Major *Moore*, then a Member of the Court of Directors of the East India Company, on the alleged Debts of his Highness the Nizam to the British Government, dated the 7th day of November 1853, and other Minutes or Dissents of Members of the Court on the same subject

---

DISSENT by Major *Moore*.

THE rejection by the Board of Control of certain parts of the Political Draft, No 831 (new treaty with the Nizam), and which passed the Court as altered on the 26th ultimo, enables me to offer the following objections

1. I object to the treaty, because I am convinced it will ultimately prove eminently disadvantageous, and perhaps even ruinous to the pecuniary, the political, and the sovereign interests of the Nizam. It is possible we might be able to justify our proceedings with reference to legal right, and the maxims of writers on international law, but we shall never be able to do so on the higher and superior grounds of a liberal and generous treatment of the Nizam, and a maintenance of that principle by which we always professed to be influenced, viz, a desire to uphold, not to subvert the Nizam's independence We shall, in my judgment, have broken that word of promise to the sense which we have spoken to the ear.

2. Because, as already observed, we might have had a legal right to insist upon the Nizam's cession to us of a part of his country in payment of the debt he had incurred, and which experience had shown he was either unable or unwilling to liquidate, yet the enforcement of this right involves a great increase of the Nizam's embarrassment, particularly as regards his irregular troops, already in a constant state of mutiny from the arrears due to them, and will thus lead to the decline, and finally to the annihilation, of his authority as an independent prince, which we have always professed it to be our intention and *bona fide* desire to maintain. It would have been more just and more generous to have avoided such a result, and to have negotiated with him (in lieu of this partial, and, as it will no doubt ove, permanent cession of a part of his Highness's territories) for our entire and lusive control of the administration of the country for a limited period, when might have restored it to him free of its embarrassments, and in that condition order which would have ensured the welfare of the country, and upheld the am himself in the position he ought to be in amongst the princes of India With would, of course, have been combined several other important measures, such he reduction of an enormous amount of useless expense by the discharge of usands of irregular troops, whose existence (and in many cases nominal exist- only on paper) serves but to swell the emoluments of the officers of Govern- t By the establishment of courts of justice, of which there are scarcely any he Nizam's country that deserve the name; by the organisation of the ancient admirable system of Munneewarree police now quite in abeyance; by the nediate removal from the country, after payment of their just claims, of the rabs and foreign mercenaries, who are now the very curse of the country; by he establishment of one universal system of coinage throughout the whole of the Nizam's country, assimilated as much as possible to the standard value of the ompany's coinage, but without infringement of the Nizam's undoubted sovereign ight of coining money; by a revision of existing treaties, and such modification of hem as the changed condition of India, and our political relations with native rinces might seem to demand. These are some of the advantages that would ave ensued, and would have been better for all parties than that which has been opted, ultimately more beneficial to the Nizam, and certainly more in accordance with our often-expressed opinion, that it was desirable to maintain the Nizam's independence and position as a sovereign. I do not advocate a preference for this enlarged policy upon the ground that it would be more acceptable to

the Nizam. I believe he would have evinced much more repugnance to a proposition to relieve him from the duties of administration over his whole country than to place certain districts under the management of British officers; but I am not disposed to allow great weight to his Highness's personal feelings in such a question, or to permit them to stand in the way of measures for his manifest advantage, as I regard those I have suggested.

3. I dissent from the provisions of the second article of the new treaty, because, although the Nizam has given apparently a ready consent to the modification of the future distribution and strength of the subsidiary force, I object to the terms in which that proposal was made. To show the grounds of this part of my dissent, I must go somewhat into the details of our political dealings with the Nizam, which, I apprehend, are not fully understood or duly appreciated in general. Our treaty with the Nizam in 1800, which forms the basis of our present political relations with the State of Hyderabad, expressly stipulated that we should maintain for his protection, &c. within his territories a force consisting of eight regiments of infantry (sepoys) of 1,000 firelocks each, two regiments of cavalry, or 1,000 horse, with the requisite complement of guns, European artillerymen, &c., which would amount altogether to about 9,500 men of all arms, and that for the payment of this force he should cede to us the Dooab (now styled the ceded districts), then yielding a nominal revenue of about 63 lacs. How have the two parties performed the respective engagements? The Nizam duly ceded to us the districts. We have reduced the numerical strength of our regiments in the subsidiary force from 1,000 firelocks to 750 of infantry, and from 500 sabres to 420 in each regiment of cavalry, and the number of troops kept up by us within the Hyderabad territory for the last 30 years has been more than one-fourth less than the number for which we had contracted, and received payment in advance, thus gaining very largely upon both transactions; for if, as I believe, the revenues of the ceded districts have increased, while the payments we made to the force (from the reduction in numbers) have decreased, the balance of profit must be greatly in our favour.

When this treaty of 1800 was made we were a mercantile as well as a political body, but now that we have dropped the former character, and call ourselves the paramount power of India, let us look somewhat more closely to the transaction, and take a more extended and liberal view of it. Upon what plea did we fall short in the due performance of our contract? By what right have we received payment for troops we did not furnish? If these facts are true, are we or are we not bound to account to the Nizam for what we have received from him for an equivalent we have not fulfilled.

The treaty of 1800 was duly confirmed by us on the accession of the presen Nizam to the musnud, and in that engagement, dated the 20th September 18 is the remarkable expression, "The stipulation of all existing treaties shall be d observed till the end of time."

By the treaty the Nizam bound himself to assist us in time of war, wit certain contingent force. I will not stop to discuss whether we were justified modifying this article of the treaty to suit our own views by changing the c racter of the contingent, substituting highly disciplined regiments under Brit officers of our own for a larger irregular body officered by the Nizam's nobles, affording patronage and provision to many natives of the Nizam's country of higher classes, but I cannot help alluding to the fact (admitted by all) that provisions of the treaty were for the contingent to be furnished in time of war o and we had no right to admit of its being maintained upon its present footing time of peace. Looking to the state of the Nizam's finances, even the expressi of a positive disinclination on the part of his Highness for any reduction in th force, is not in my judgment sufficient. We have rendered it permanent, contrary to the principle of the treaty, and have altered it so as to be useful for our ow purposes. Its commands and staff appointments have afforded rewards for meri torious officers who had distinguished themselves in our own armies, and it has been altogether a fertile source of patronage. The Nizam had no voice in the organi sation and equipment of this force; it was entirely managed by us, and althoug paid by his Highness, we have always assumed a right to withhold its service from him, when we choose to disapprove of the object. Hence he has been oblige to maintain large numbers of other troops on his own account for ordinary service in his territories, and the advantages he has derived from his contingent have been nearly similar to the advantages derived from the subsidiary force supplied by us.

The revenues of the Nizam were calculated at about 1 crore and 60 lacs. The pay of the contingent was nearly 40 lacs, with such an incubus on its finances, is it to be wondered that after a time funds for its maintenance were not forthcoming? I well know to what shifts the Nizam's ministers have had to resort to meet our inevitable demand for the monthly pay of the contingent! What evils it has been the cause of! Loans from money dealers at exorbitant interest; farming of districts at a ruinous loss, forestalling of revenues, and a host of attendant miseries. Overwhelmed with financial difficulties, the Nizam was at length unable to pay the contingent, and we kindly lent him the money from our own treasury, first at 12 per cent., and latterly at 6 per cent. interest, and thus our staunch ally has incurred a debt to us of about 50 lacs, the consequences of which are the present

"Revised Treaty."

Now considering the great advantages we have ourselves derived from our dealings with the Nizam, and that we have had no small share in bringing him into his financial difficulties, I maintain that he was entitled to more liberal treatment at our hands than he has experienced. Does it accord with the high character we assume to ourselves as rulers of the Indian empire, to take the opportunity of the embarrassed position of the Nizam to frame a treaty so prejudicial to his interests? Was there no other way to extricate him from his difficulties than by placing him under so dangerous an obligation? The obvious cause of the financial difficulty was the contingent, the obvious remedy was its partial reduction. Did we urge its reduction? By no means. Previous to discussing the new treaty, the Nizam had the option given him, and it is said that he was strenuously opposed to the slightest reduction of it. The very reasonable question by his Highness to the Resident, Colonel Low, as to why the contingent was not reduced after the war, was considered by that able diplomatist as "a remarkable and unexpected speech." Let us not shelter ourselves under such a pretext. The Governor General considers that there are more regular troops in the Nizam's country than are necessary in these times of peace, therefore the contingent is maintained which enables us to withdraw two brigades of the subsidiary force which will be applicable to other purposes of our own in Pegu or elsewhere. This is called a *slight* modification of its distribution—a transfer of a part of the subsidiary force to the duties of general service in our own province.

Why is not the Nizam to have the advantage of considerable reduction in his own standing army in time of peace? I would ask, is it right, just, or proper, that we should concur in his desire to maintain troops to perform duties which we have contracted to perform ourselves, and been paid for? We may, if we choose, insist upon the repayment of every rupee advanced to the Nizam, but I cannot admit we are justified in disregarding our own engagements by lessening the force we had stipulated to keep up.

Is it becoming, on our part, to endeavour, by specious arguments, to show that the Nizam is a gainer by a measure of which the whole benefit is ours? or that eight regiments of 1,000 firelocks, as specified in the original treaty, meant, in spirit, eight regiments of 750? No, let us call things by their right names. It is not on grounds of benefit to the Nizam that the treaty can be upheld, for it really appears as if we had taken the occasion of turning his difficulties to our own advantage.

The result may be shown in a few words.—

By the original treaty, we were bound to keep up about 9,500 men within the Nizam's territories, for which he paid in advance.

By the present, we are bound to keep up about 5,000 men.

By the original treaty, the Nizam had to provide a contingent in time of war.

By the present, he provides a territorial fund to keep up a contingent in time of peace or war, and cedes districts in perpetuity for the payment thereof.

There is still another point of view exhibiting the impolicy of the treaty. We assume for the payment of the contingent the districts of Berar, &c. &c. We did not allow the Nizam to assign such as would be most convenient to himself, but we selected these districts as adjoining our own provinces; and, as being especially improveable, are we justified in seizing, with a strong hand, that to which others have an equal, or, perhaps, a better claim? There are hundreds of others who have claims on the Nizam's Government fully as legal as our own. What right have we to alienate these provinces from the general purposes of the State, and apply their revenues exclusively to the payment of the contingent and the gradual liquidation of our own debt, with interest? I do not see how we can disregard claims similar to our own; and we shall find ourselves involved in further pecuniary questions with the Nizam, which must lead to further interference in his affairs, and further cession of territory.

I shall conclude the observations I have ventured to make, by appending to this dissent a short extract from the papers of the late Henry St. George Tucker, than whom a more able and energetic man never occupied a seat in this Court, as I consider the views therein expressed as peculiarly applicable in this case.

EXTRACT from Memorial "of Indian Government," page 251.

WE are told, indeed, that our Government has become the "paramount power" in India; and as such may deal with its vassals and dependents according "to the dictates of an enlightened policy. True, we wield the power of the sword, and our political supremacy is everywhere acknowledged; but we do not possess, and never can possess, the power to violate treaties, the power to do wrong and to commit injustice, the power to dominate over those who cannot resist us, while we hesitate to enforce it in our relations with those States who enjoy, with a large territory, a greater degree of independence

"To apply to the weak a rule which it would be unsafe to extend to the strong would ill become the British character; and I must contend that in giving effect to the obligations of a treaty, we consult alike the dictates of justice, and of sound policy"

(signed) *J. A. Moore.*

East India House,
7 November 1853.

---

(773)

DISSENT by Sir *H. Willock.*

Affairs of the Nizam.

I DISSENT from the Political Draft, No. 863, on the affairs of the Nizam, which has this day obtained the sanction of the Court; for the following reasons:

The Government of India from time to time made advances for the support of the contingent force which eventually amounted to 72 lacs of rupees. All endeavours to obtain repayment of this sum failed, and the Governor General determined to sequestrate certain provinces of the Principality for the absorption of this debt and to provide for the future payment of the force.

The Nizam, by an unlooked-for effort, has provided for the liquidation of the debt, and the sequestration of the provinces is suspended

The maintenance of the contingent has occasioned a pressure on the Nizam's finances, and has matured the embarrassment under which he at present labours; it is therefore to be considered, if his Highness is bound by treaty to the support of the contingent, as at present constituted, absorbing as it does nearly a third part of his Highness' net revenue.

I shall best prosecute this inquiry by a reference to public documents. The first notice on the part of the Court of Directors respecting "The Nizam's Contingent Force," is contained in a Despatch to the Governor General of India of the 21st January 1824, and in that communication it is notified that the Secret Committee, on the 3d April 1815, expressed disapprobation of its formation.

In the 81st paragraph of that Despatch, the question of the right we possess under the treaty to establish the contingent is thus treated:

"With reference also to the 12th article of the treaty of 1800 with the Nizam, it appears to us very doubtful whether the proceeding be consistent with good faith, particularly if, as stated by the Marquis of Hastings, the mode of officering and paying the reformed corps render them in effect a part of our army, on whose fidelity we may rely, even on a rupture with their nominal chief."

In a subsequent part of the same Despatch, the evil consequences of placing too heavy impositions on Native States are strongly depicted:

"It even merits consideration, whether in cases where they (Native States) are bound to us by treaty to maintain a certain force, it might not be politic, if not altogether to absolve them from such engagements, at least to modify or relax those obligations, so as to bring the cost of them within the means of a native state. When a larger force is kept up than the State can afford to pay, revenue for a time is extorted at the point of the bayonet, rapacity soon defeats its own ends, the public resources, instead of improving, decline, the pay of the troops falls into arrear, discontent leads to mutiny, &c &c. &c."

These predictions have unhappily been realised at Hydrabad

In the early stage of the reformation of the irregulars, the Minister steadfastly persisted that the officers appointed to discipline them should not be servants of the East India Company. He could not but foresee that under such a constitution, they would pass from his control. It soon became the rule of the service, "that the Nizam's army, so long as it shall be officered by British subjects, is not to obey the requisition of the Minister until he (the Resident) has first satisfied himself that their services are to be required in a just cause."

The Minister, being thus deprived of the services of these irregulars, who were the personal guards of the Nizam, and constituted the force relied upon by the collectors of revenue and officers of police, to maintain peace and order in the country, and regulate its internal management, was necessitated to organise another and very objectionable force, composed of Patans, Rohillas, and Arabs, to enable him to carry on the administration, and support the authority of his Highness the Nizam's Government.

The gradual transition of the Nizam's irregulars to a disciplined corps is thus described in two paragraphs of Sir Charles Metcalfe's minute of 1832

"The contingent furnished by the Nizam being found inefficient, we gradually assumed the management of it until we finally established a force in lieu of it completely under our own control.

"This we were enabled to do by the subserviency of the Minister who was the creature of our ascendancy, and who saw in the existence of this force the means of maintaining his power against rival nobles, as well as refractory subjects."

It appears also by Sir C. Metcalfe's Minute of 1832, that he considered the charge of the contingent as too onerous on the Nizam's Government

"When I was minister at Hydrabad I made several attempts to reduce the expense of the force (the contingent). A regiment of cavalry was discharged, the rest of the cavalry was reduced in number; some staff appointments were abolished, but all to no purpose, as to any relief it afforded to the State finances The minister (Chundoo Lal) squandered the amount thus saved, and so he will do with respect to any reduction of expense that can be effected"

In pursuance of this inquiry, I will advert to the opinions of successive residents at Hydrabad. Those of Colonel Stewart I find quoted in the Court's Despatch to the Government of India of the 8th September 1835 ·

"Those who have witnessed the course of our policy at this Court during the last 30 years, who have seen how we have put up the creatures of our own as ministers, and supported them against their Sovereign; how we have obtained the control of all the effective troops of the State; and how we assumed the civil control of the country, can hardly feel a doubt, least of all the Nizam himself, that we have considered ourselves the actual rulers of the country Many evils which exist in this State are unquestionably the almost unavoidable result of our connexion with it. It seems hardly fair, therefore, to hold either the Nizam or his minister responsible for these evils. Situated as they were, I do not think they had the power to correct them; in fact, we may perhaps more properly be regarded as responsible for them, having the power in our own hands, and having shown that we are in no way scrupulous about making use of that power when we thought fit to do so."

General Fraser, in his Despatch to the Government of India, of 20th July 1842, says:—

"If the Nizam is permitted to retain the impression of his being absolutely and actually independent, it is not improbable that, besides other evils which may arise, we shall experience one of great magnitude in a proposition on the part of his Highness for the disbandment of the contingent, to which he is known to be averse, and of which neither the continued maintenance nor the original organisation are provided by any existing treaty."

It may be collected from General Fraser's observations, that the utility of the contingent force is not commensurate with the evils attending its continued maintenance on its present footing. Without doubt it is an useful and efficient instrument of war; but, surrounded as the Nizam's country is by our territory, protected as he is by the subsidiary force of 8,000 men, mostly stationed at Secunderabad, and under the circumstances of there being no necessity for defence against foreign aggression, it may safely be asserted that the strength of the contingent may be greatly diminished without prejudice to the internal security of the country.

General Fraser observes—" An amount of nearly 40 lacs of rupees per annum, being nearly a third of the revenue of the whole country, is expended for the maintenance of an army from which more aid and advantage might be looked for than has hitherto been effected."

The following memorandum of an interview of Captain Malcolm with the Minister forms an accompaniment to General Fraser's Despatch of 26th July 1842 :—

" The Minister then told me to communicate to the Resident that during the period of upwards of 30 years he had been minister, he had never been in such embarrassed circumstances at at present; that his predecessors had no difficulties, in comparison with his, to contend with. The revenues in those days were more flourishing than at present, the allowance to the Nizam's family was smaller; while they were not called upon to meet the heavy demand of 3⅓ lacs of rupees per mensem, on account of the contingent force under British officers."

I now come to the opinions of Colonel Low, conveyed in his report to Government, of the 20th July 1848 :—

" It is still more grievous to reflect that a considerable portion of these pressing pecuniary difficulties of the Nizam's Government has been indirectly brought upon it by our own annual demand upon its revenues for 40 lacs of rupees per annum for the pay of the contingent force.

" It is really painful to me to mention all these facts and circumstances connected with the Nizam's contingent, but I have observed since I arrived here the pecuniary embarrassments of the Government to be so extensive that I have considered it an imperative duty to state my opinion candidly for submission to the Governor General in Council, and upon the same principle I now close the report by expressing my opinion that immediate steps ought to be taken for reducing the expenses of the contingent to a sum not exceeding 20 lacs of Hydrabad rupees per annum at the utmost. because whatever may have been the case formerly, it appears to me quite manifest that the Hydrabad Government cannot now afford to make the large ready money payments that are required by us for the maintenance of that force. I am convinced that if that constant drain were kept up for three years longer, it would cause a very serious increase to the confusion and distress of this capital, and that it would probably bring the whole machinery of the administration to a stand-still, whosoever might be the minister at the head of it, and how much soever he might be supported by our influence."

The decision of the Court of Directors respecting the contingent was clearly expressed in a Despatch to the Government of India, adopted on the 26th October 1849. It is true that this Despatch was cancelled by Her Majesty's Commissioners for the Affairs of India, but as it is a recorded document of the opinion of the Court, I am at liberty to quote it:

Para. 13. " It is here necessary to observe that the view taken by your Government of our right by treaty to demand of his Highness that he should maintain a body of 8,000 disciplined troops is contrary to the opinion which has hitherto been professed and acted upon, both by the Government of India and by ourselves. The 15,000 troops stipulated for in the 12th Article of the Treaty of 1800 were to act in conjunction with the subsidiary force, and only in case of war; and it has been invariably admitted that the arrangement by which a force under British officers is kept up at all times for internal service in the Nizam's own dominions does not rest on any treaty, although the contingent was formed, and the corps organised with the consent of the Nizam's Government, and is kept up by his continued tacit concurrence."

The foregoing statements establish the fact that the Court, on their first and last review of the contingent, have declared that the Nizam was not bound by treaty to maintain it as at present constituted. Secondly, that the Court foresaw in 1824 that the resources of the Hydrabad State were not adequate to its maintenance, and that the evils then predicted by them have come to pass.

Successive Residents of Hydrabad, officers of high character and standing, viz., Sir Charles Metcalfe, Colonel Stewart, General Fraser, and Colonel Low have severally declared that we are not justified by treaty in making such large calls on the Nizam's treasury, and that the burthen of the contingent has materially operated in producing the financial embarrassments which now paralyse the power of the State. It may be as well here to state that the expense of the contingent, at the period of its establishment, absorbed one-fifth of the income, and that under the present diminished resources it forms a charge of nearly one-third of the net revenue.

I have shown that the Court of Directors do not concur in Lord Dalhousie's interpretation of the treaty His Lordship on the 7th October 1848 expressed the opinion that the British Government commits no injustice, and practises no extortion, in requiring that the contingent force "maintained by virtue of treaty" be kept up by the Nizam, and that his Lordship does not think that we are called on in justice to reduce a man of that force, and he is very certain that in policy we ought not to adopt any such measure; but as his Lordship concurred in opinion with Colonel Low that the contingent has become a much heavier burthen than it ought to be, he expressed an intention to diminish the unnecessary expenses of the staff as vacancies might occur, but even these reductions were to be made dependent on the co-operation of the Nizam with the views of his Lordship

The Despatch of the Court of the 18th December 1849, sent by order of the Commissioners for the Affairs of India, sanctioned a more extended relief to the Nizam than that contemplated by the Governor General "We are of opinion that these measures ought not to be made dependent on the conduct of the Nizam If the contingent imposes upon the finances of the Nizam a greater burthen than is required by the maintenance of efficiency, the Nizam ought at once to be released from such unnecessary pressure." Since the issue of the above instruction, the embarrassments of the Nizam have increased, his country has been disturbed by internal commotion, the services of the contingent have been refused him, when they might legitimately have been afforded, the revenue has been further on decline, the pressure of the contingent has more sensibly been felt and no step has been taken to carry out the instructions of the Court Vacancies have occurred in the staff of the contingent, and they have been filled up by the Governor General

I conceive that the above circumstances ought to have been adverted to in the draft

The recent partial payment of the heavy debt to the British Government, and the provision made for its total liquidation, are events quite unlooked for, they arrest, for a moment, the sequestration of provinces, and produce a deceptive appearance of improvement, while they really involve him in deeper embarrassment. No explanation has been offered as to the terms on which so large a sum has been raised, and inquiry on this point is not deemed expedient, but as his Highness' credit was exhausted, and as the Soukars had declined to make further advances, it is evident that the effort must have entailed a great sacrifice, must have left the Nizam's finances in a greater state of exhaustion, and that his Highness will have to maintain the undiminished expenses of his government on a diminished revenue. The alteration in his position is this: he paid the British Government 6 per cent on his debt of 72 lacs of rupees, and he will have to pay his new creditors from 15 to 20 per cent. on the like sum.

The draft does not touch upon these inferences, but expresses the hope that the arrangement made for the prospective discharge of the pay of the contingent may be effectual. The fallacy of this expectation is so obvious, that it compromises the sincerity of the Court.

When we see the country of our ally sinking deeper and deeper into disorder and financial difficulty, it behoves us, as his protectors, to take efficient measures for his preservation; and it is by extending substantial acts of relief in the present crisis, and by an extension of paternal interference in assisting his minister to effect necessary reforms, that we may best prove the sincerity of our expressed and continually repeated desire to maintain the integrity of the Nizam's rule. We have to deal with a prince incapable of breaking through the trammels which surround him.

Every item of public retrenchment and reform which he is expected to carry through affects him personally, or diminishes the incomes of his relatives and favoured followers By an existing regulation of the State, the portion of revenue devoted to the maintenance of the Nizam and family is 25 lacs of rupees, and to this he ought to be restricted He has been accustomed to receive into his private treasury Nuzzerana, raised on the nomination of officers to public places, and also a per-centage on all public disbursements, and these sources of emolument ought to be closed Talookdars will be called upon to reside at their collectorates, Jemadars and Ressaldars will have reduced commands, and every person of rank who has access to the Nizam will be a loser by the projected reforms Under such influences the minister is not likely to meet the support of his master; all the weight of private opposition will counteract his endeavours to benefit the State Every latitude ought, therefore, to be given to the Resident to assist the Minister in his most arduous undertaking, and it is only by an extension of interference almost daily exercised by the Resident, that any efficient reformation can be worked out

Such a course is not contemplated by the Court.

I object to this draft which has now passed, because it curtails the relief accorded in the Court's Despatch of December 1849, sent by order of the Commissioners for the Affairs of India, and because the Court do not sanction due assistance to the Nizam in the reduction of the expenses of the contingent Vague and undefined as the expressions of the draft are on this head, having before us the opinion of the Governor General honestly and manfully expressed, that we are not in justice bound to reduce a man of that force, and that in policy we ought not to adopt such a measure, I think the present instruction of the Court conveys to Lord Dalhousie license to carry out relief only to the extent of reducing the staff as suggested by his Lordship, and that no effective stay to the Nizam's disasters will be afforded by such unimportant concessions.

I regard the rapid deterioration of the Nizam's affairs as now inevitable He must soon fail in prospective payment of the contingent force The partial sequestration of provinces having received the sanction of the Court, will be enforced without further reference to the Home Authorities, and his inability to effect reform will entail increased disorder, which will soon lead to a state of insolvency, and to a termination of his rule It was to prevent such an issue that I ventured to recommend an amendment to the draft now carried, which has not received the Court's approbation

Since I have had the honour of a seat in the East India Direction, it has been my study to respect the condition of Native States, and to make allowances for their not fulfilling expectations, when judged by the rules of an enlightened state of society, but I have not touched in this paper on the good effect which a generous consideration of the failings of native administration produces on the minds of neighbouring nations, and which gives a sanction to our rule in the estimation of Europe. In pursuance of the course I have observed on this occasion, in placing prominent the opinions of others rather than my own, I will here quote the notice of Lord Hardinge in alluding to the misrule of the King of Oude, and to the policy of endeavouring to maintain rather than to absorb such principalities:

"I should strongly deprecate any policy which would deprive the reigning family of its just power under the treaty of 1801. It is most desirable to maintain the reputation of the East India Company for good faith in their transactions with Native States The fame of our rule is a tower of strength, not only as regards our connexion with the Native States of India, but also with European powers, and I am confident your Honourable Court will repudiate any compulsory arrangements by which the British Government could be accused of a desire of profit at the expense of a faithful and powerless ally."

If such principles of equity and liberality influence our proceedings towards the Nizam, and other native allies, I feel satisfied that our dominion in Asia, already characterised by gentleness and humanity towards the masses of the population immediately subject to our rule, will be both flourishing and permanent.

We must not lose sight of the fact, that in demanding from the Nizam more than his finances are able to render, he is compelled to practise undue extortion on his subjects, and a question arises, which it may be convenient to answer, as to who are the parties responsible for such oppression.

I lament the occasion of my present dissent.

(signed) *Henry Willock.*

East India House,
19 November 1851

(No. 774.)

PROTEST by Colonel *Sykes*.

1. A CAREFUL consideration and review of Hydrabad affairs places me under the necessity of recording an earnest and deliberate protest against the Court's Draft, No 863 of 1851, which approves of the proposed seizure or appropriation of territory from the Nizam in liquidation of a debt accruing from the occasional advances of money since 1842 by the Indian Government in payment of a body of regular troops exclusively under British officers and British authority, but denominated the Nizam's Regular Infantry: and for other reasons — Affairs of the Nizam.

2. Because the manner in which the debt has been incurred admits of a question being raised whether a legal, equitable, or moral responsibility can be fixed upon the Nizam for the repayment of the total advances made by the British Government.

3. Because the responsibility fixed upon the Nizam for repayment of advances of money to complete payments to this body of troops is founded upon the erroneous supposition that the Nizam substituted the body of troops in permanency in place of the Contingent he bound himself by the treaty of the 12th October 1800, to furnish to the British Government in time of war only, the following being the text of the treaty:— Mistake in considering the Nizam regular troops a substitute for the Contingent of the treaty of 1800.

"Article XII. The contracting parties will employ all practicable means of conciliation to prevent the calamity of war, and for that purpose will at all times be ready to enter into amicable explanations with other States, and to cultivate and improve the general relations of peace and amity with all the powers of India according to the true spirit and tenor of this defensive treaty. But if a war should unfortunately break out between the contracting parties and any other power whatever, then his Highness Asoph Jah engages that with the reserve of two battalions of sepoys, which are to remain near his Highness' person, the residue of the British subsidiary force (consisting of six battalions of sepoys and two regiments of cavalry, with artillery), joined by 6,000 infantry and 9,000 horse of his Highness' own troops, and making together an army of 12,000 infantry and 10,000 cavalry, with their requisite train of artillery and warlike stores of every kind, shall be immediately put in motion for the purpose of opposing the enemy, and his Highness further engages to employ every further effort in his power for the purpose of bringing into the field as speedily as possible the whole force which he may be able to supply from his dominions, with a view to the effectual prosecution and speedy termination of the said war, the Honourable Company in the same manner engaging on their part in this case to employ in active operations against the enemy the largest force which they may be able to furnish, over and above the said subsidiary force." Terms of treaty.

It was, therefore, only on a war breaking out with another power that the treaty bound the Nizam to join the British with a Contingent of 6,000 (irregular) infantry and 9,000 horse; and that the permanent maintenance of the Contingent for the exclusive preservation of order, or the suppression of insurrection within the Nizam's dominions, was never contemplated by the treaty is testified by the 17th Article, the text of which is as follows:—

"XVII. By the present treaty of general defensive alliance, the ties of union, by the blessing of God, are drawn so close that the friends of one party will be henceforward considered as the friends of the other; and the enemies of the one party as the enemies of the other; it is therefore hereby agreed that if in future the Shorapoor or Gudwal zemindars, or any other subjects or dependents of his Highness' Government, should withhold the payment of the Sircar's just claims upon them, or excite rebellion or disturbance, the subsidiary force, or such proportion thereof as may be requisite after the reality of the fact shall be duly ascertained, shall be ready, in concert with his Highness' own troops, to reduce all such offenders to obedience. And the particular interests of the two States, being now in every respect identified, it is further mutually agreed that if disturbances shall at any time break out in the districts ceded to the Honourable Company by this treaty, his Highness the Nabob Asoph Jah shall permit such a portion of the subsidiary force as may be requisite to be employed in quelling the same within the said districts. If disturbances shall at any time break out in any part of his Highness' dominions contiguous to the Company's frontier to which it might be inconvenient to detach any portion of the subsidiary troops, the British Government in like manner, if required by his Highness the Nabob Asoph Jah, shall direct such proportion of the troops of the Company as may be most conveniently stationed for the purpose to assist in quelling the said disturbances within his Highness' dominions."

British subsidiary force liable to assist in putting down resistance.

4 Hence it appears that the British subsidiary force of 8,000 infantry, 1,000 horse, and proportion of artillery, for which territory had been ceded by the Nizam to the Company of the annual value of 18,13,188 Company's pagodas, or 63,46,158 rupees, were to be ready at all times to aid the Nizam's troops in suppressing disorder and punishing rebellion; and that the Contingent of irregulars of the treaty was in no way identified with any body of regular infantry then in the Nizam's service, as testified by the fact that on war breaking out between the British and Scindiah, and the Rajah of Berar in 1803, the Nizam, in conformity with his treaty, supplied a body of 6,000 infantry and 9,000 horse, whose efficiency was favourably spoken of, and which served under the orders of General Wellesley in the war, and acquitted itself well and did good service, although at that very time a remnant of Raymond's regular French Infantry, which was the nucleus of the present overgrown infantry Contingent, was doing duty in the province of Berar under European officers not in the Company's service. In 1804, when the war broke out with Holkar, the Nizam's Contingent was less efficient than it had been in the campaign of the previous year; and, in consequence, the Resident proposed that the Nizam should entertain a body of horse under British officers The British Government negatived this proposal, but, at the suggestion of General Wellesley, proposed to the Nizam that he should keep up 10,000 Silledar Horse; but after lengthened discussions the Nizam refused, and matters remained in their previous state.

Regular infantry in Berar existing while the Contingent of the Nizam was in co-operation.

The Nizam's regular infantry in Berar.

Lieut. C. Russell's opinions of regular infantry.

Horse could not be reformed.

Europeans in the Nizam's service

5 In May 1807, when Mahiput Ram, who, as Governor of Berar, was superseded by Govind Buksh, these troops* were devoted to the interests of Mohiput Ram, and with French predilections, and Lieutenant C. Russell says, letter 5/3, 1807, para. 16, "I have already had the honour to state to you my opinion that the defects of the infantry establishment are so deeply seated, that no measure scarcely short of dismissing and reforming on a new system the whole of the corps will be adequate to remove them. This measure might be gradually effected at Baussam by Rajah Govind Buksh, assisted by the advice of the officer commanding the (British) detachment; as fast as one corps had been formed it might be detached on duty, and another called in to be submitted to the same change. The strength and number of these corps would of course be determined by Govind Buksh." They appear then to have consisted of six regiments, with a European commanding officer and adjutant. Lieutenant Russell did not propose to reform the horse, which, he says, is like all other irregular horse in India. The Governor General, in Mr. Secretary N. B. Edmonstone's letter 21/5, 1807, approved of Mr. Russell's views, and admitted that the horse could not be reformed. At this time there were six English Europeans, Elliott, Drew, Lloyd, Freeman, Norris and Blake, and a Portuguese Ferroobio in the regiments, besides other foreigners. The pay of the Commandant was 400 to 500 rupees a month. and Adjutant 200 to 250.

Reform of infantry ordered.

6. Consequent upon the approval of the Supreme Government, Captain Sydenham, the Resident at Hydrabad, wrote to Lieutenant-colonel L. Doveton, 25/6, 1807, commanding the British detachment in Berar, as follows. para 5; "With respect to the reform of the corps of infantry in Berar, Mir Allum has instructed Govind Buksh to form six corps of 1,000 men each, and the Rajah has been furnished with a list of the rates of pay to be allowed to each rank of the service. The subadars are to receive each 30 rupees; jemedars, 15; boat havildars, 12; havildars, 10; naiques, 8; and sepoys 6 rupees."

The Resident appoints the European officers to the reformed infantry.

Resident notices his power of dismissal.

"Para 7 Secondly, the appointment to the command of the several corps of attentive and respectable Europeans, whose attachment to the united interests of the British Government and the Nizam may be depended upon. It would be desirable if all the Europeans attached to the corps were of that character. I have every reason to be satisfied with the character and conduct of Messrs Elliott, Drew, Lloyd and Freeman, who are at present in Berar. I have also heard that a Portuguese of the name of Ferriobio, and who is at present stationed near Heweekeir, with Iewar Khan, is an active and intelligent man. I should not wish to interfere with the employment of any European of inoffensive character who may be in the service of the Nizam, but I shall feel no hesitation in effecting the discharge of any European who, by his principles, character or conduct, may render it dangerous or inconvenient to retain in the service.

"Para. 9. I beg that you will furnish me with the names of those persons whom you may consider best entitled to hold the commands of the corps, and of those who may appear to you best qualified to be appointed to the adjutants of them."

Absolute control of infantry in the Resident

It is hence manifest that, from the moment of the reform of the Nizam's regular infantry, the absolute control and consequent responsibility, even to pay and promotions and dismissals, was assumed by the Resident at Hydrabad, a control and responsibility which has never been relaxed from that day to the present

French interest not extinct.

Two brigadiers appointed

7. In July 1807, Colonel J. Doveton reported that the French interest was not yet extinct amongst the regulars Consequent upon their reform, Colonel Doveton proposed to have two officers to command brigades of three regiments each, the additional allowance to be 200 rupees a month. in addition to regimental command

8. On the 22d June 1810, the Resident, Captain Sydenham, reported to Lord Minto the state of these troops in Berar, consequent upon their reform, and in the 2d paragraph they are, for the first time, called "The Nizam's Contingent Infantry in Berar" (for which term there does not appear a shadow of authority), and in the following paragraph he spoke of "the measures which are still required to accomplish the original intentions of the British Government

Reform for British objects

Hence they are still dealt with as completely under British control for the realization of a British object He reported "that all remains of French influence were extirpated, and recommended that the troops should be supplied with arms, accoutrements and ammunition from British arsenals, at the expense of the Nizam's Government, and that a commandant and superintendent of the whole force should be appointed, to be responsible for their discipline, efficiency and uniformity," and further stated, "that, under the gradual operation of this system, the Nizam's Contingent Infantry would be rendered effective and serviceable troops, they could at all times be advantageously employed in maintaining the tranquillity and supporting the authority of the Nizam's Government, and they would become useful auxiliaries to the British subsidiary force on any occasion of actual service in the field "

He then reminded Government, that he "had before stated that Govind Buksh could not restore Berar to a flourishing state if the British subsidiary force were not actively employed in expelling and destroying the bands of freebooters who infest the country," but that, as the Nizam's infantry became efficient, the subsidiary force would be saved the labour

No authority for the designation of Contingent

Here, again, one of the objects of the reform of the Nizam's infantry was to save the British subsidiary force from military operations, which it was bound to afford by the 17th article of the treaty. Although Captain Sydenham, the Resident, for the first time designates the Nizam's infantry as the Nizam's Contingent, he does not claim a shadow of authority for the designation, the Resident neither adverted to the authority of the Nizam for it, nor does it appear that the Nizam either directly or indirectly sanctioned it, or even knew of it, in short, that it was a term gratuitously assumed by the Resident, and could not honestly be identified with a Contingent which the Nizam was only bound to supply in the time of actual war, but the term has, unhappily for the Nizam, adhered to this body of troops ever since, and has occasioned mistaken associations in the minds of successive authorities in India, that the Contingent was a commutation of the Contingent stipulated for in the treaty of 1800, and that we were therefore justified in exacting its maintenance

Effects of mistaken designation

Resident desires to apply the peshcush to the payment of the troops

In the penultimate paragraph of the Resident's letter he says, "I cannot here omit to observe, that it would give great facility to the immediate equipment of the corps, and would secure the future efficiency of them, if the ministers of the Nizam's Government would consent to apply the amount of the peshcush for the Northern Sircars to the payment of the infantry establishment in Berar." *

Report of Lieutenant George Sydenham

Nizam's troops not to be employed on revenue duties

Further proof of the troops being entirely under the control of the Resident is shown in the report of Lieutenant George Sydenham, June 15th, 1810, in paragraph 19, he recommends that, to obviate the regiments on distant commands being broken up into several detachments, "the infantry in general be not employed upon duties of revenue, unless they be absolutely required by the

---

* The British Government had to pay the Nizam annually, in cash, a peshcush, or tenure fee for the Northern Circars.

the failure of the customary revenue officers and sibundees in their collections" He then recommends the supply of 5,000 stand of arms, six six-pounder guns, six howitzers (5½-inch) and carriages, &c., and further recommends inspection and relief, reports and returns, precisely as if they were British troops

Completion of the reform.

Strength

9 In 1813 most of these recommendations, except the surrender of the peshcush, had been carried out, and on the 1st January 1813, the force consisted of 17 European officers, 69 non-commissioned officers, 267 Native officers, and 3,652 rank and file. At this time the troops were made the first charge upon the revenue of Berar.

On the 31st March 1813, the Resident, Mr Henry Russell, reports to Government that the system was extended to a corps at Hydrabad. A battalion under a Mr. Garden having mutinied, was transferred, by orders of the minister Chundoo Lall, to a Mr. Beckett, with orders to complete the strength to 800, and to raise a second regiment, the whole to be denominated the Russell Brigade; and their pay was to be disbursed from the Residency treasury on the 1st of every month, the amount being deducted from the peshcush, payable by the British Government to the Nizam. This seems to be the first instance of the payment of any portion of the Nizam's infantry from a British treasury. Artillery was attached to this brigade, and the minister Chundoo Lall asked permission to purchase their equipments from the Company's stores. The European commanding officers (seven) were not in the British service. In 1813 for the first time, officers of the Royal and Company's Service were appointed to the so-called Contingent in Berar and the Russell Brigade, and in 1822, 1824 and 1828, the Court of Directors forbade the employment of any but Company's officers in the service of any of the Native States.

Russell Brigade

First payment by Resident

30 January 1822, 21 January 1824, and 21 May 1828, Court forbid the employment of any but Company's officers

Reformed horse

10 The Nizam's Horse had remained in the same state as in 1807; but the depredations of the Pindarries, particularly in 1816, led to 4,000 Horse being placed under Captain Davis, assisted by five British officers, together with 2,000 Jagheerdar Horse. The object of this force was the repulse of the Pindarries, and the protection of Berar, but no mention is made of this body being the equivalent of the 9,000 horse of the treaty, and the advantage to the British interests is testified by the letter from the Supreme Government to the Resident, dated 22/2, 1817, in which it is termed "highly desirable" and "important;" and in the letters addressed to the Governments of Fort St. George and Bombay of the 22d February 1817. In para. 1, is the following:—"The Resident at Hydrabad having reported the accomplishment, under the instructions of this Government, of a highly desirable arrangement, by which a body of 6,000 cavalry in the service of his Highness the Nizam, is to be organised and disciplined under the superintendence and control of European officers; and Captain Davis, the commandant, having been permitted to nominate the officers, &c &c. &c.:" and in para. 2, that there might be no mistake about the interest of the parties, the following occurs:—"Adverting to the essential benefit which the interests of the British Government will derive from the formation of a regular corps of cavalry in the Nizam's pay under British superintendence, his Lordship in Council has been pleased to determine that the officers now proposed to be employed in that service shall continue to draw their regimental pay and allowances from the Honourable Company, in addition to the pay which they are to receive from the Nizam (signed) *J. Adam*, Acting Chief Secretary to Government."

Horse reformed by order of the Supreme Government

Nizam's troops serve in the war of 1817/18 to our advantage

11 During the war of 1817/18, both the reformed horse and the Nizam's regular infantry served with much distinction, and greatly to our advantage, with the different divisions of the army of the Deccan; and the Russell Brigade was in the battle of Mahidpoor; and no corps was in finer order or better performed its duty, and both horse and foot were repeatedly mentioned in General Orders.

Ellichpoor Brigade formed

12 Salabut Khan of Ellichpoor, a Jagheerdar in Berar, was bound to assist the Nizam with 2,000 troops. In 1820 he was induced to put 1,300 foot and 780 horse under British officers on the footing of the Nizam's troops. Here again our influence was extended and our interests strengthened.

13 In 1818 the troops were formed into two divisions, and the horse and foot were placed under one superintending military authority, including the Ellichpoor Brigade. With the same or even a smaller number of troops these two divisions have been augmented to five divisions, with proportional staff, at an annual cost for the staff alone of 2,88,960 rupees, to the serious impoverishment of the Nizam's means.

14. Again

Interview of Captain Malcolm and the minister. Complaints of Minister

14. Again the Peschar (acting minister), in a conversation on the 23d April 1842 and successive days with Captain Malcolm, on the part of the Resident, complained bitterly of his financial difficulties; pointed out the increased expense of the force from 24 lacs per annum in Sir Charles Metcalfe's time to 42 lacs per annum at that moment, and said, before Sir Charles Metcalfe interfered with the revenue administration of the country, it yielded 2 crores and 6 lacs per annum, and with regard to an outlay for guns and mortars, he exclaimed, "What is the use of all this expenditure in time of peace?"

Regular military returns made.

15. In 1826 regular military returns of the force were made to the British Government, and they have been continued ever since, as if the troops were constituents of the Indian armies.

16. The transition of the Nizam's irregulars to the disciplined state is described in two paragraphs of Sir Charles Metcalfe's Minute of 6th March 1832.

Sir C. Metcalfe's Minute, 6 March 1832

"The Contingent furnished by the Nizam being found inefficient, we gradually assumed the management of it until we finally established a force in lieu of it completely under our own control.

The Minister a creature of our own

This we were enabled to do by the subserviency of the Minister who was the creature of our ascendancy, and who saw in the existence of this force the means of maintaining his power against rival nobles as well as refractory subjects." Sir Charles Metcalfe adds, "Since the formation of this force, exclusively under our orders, neither the late nor the present Nizam has taken cognizance of it; they have left it, like other matters of their government, to the management of their minister, being either unwilling or unable to interfere with his uncontrolled administration of their affairs. It is, in reality, a joint concern between Rajah Chunder Loll and us, in which the Nizam himself takes little interest as in other affairs of his dominions."

17. The following observations of Colonel Stewart are quoted in the Court Despatch to India of the 8th September 1835:

Colonel Stewart's opinions

"Those who have witnessed the course of our policy at this Court during the last 30 years, who have seen how we have put up the creatures of our own as ministers, and supported them against their sovereign, how we have obtained the control of all the effective troops of the State, and how we assumed the civil control of the country, can hardly feel a doubt, least of all can the Nizam himself, that we have considered ourselves as the actual rulers of the country. Many of the evils which exist in this State are unquestionably the almost unavoidable result of our connexion with it. It seems hardly fair, therefore, to hold either the Nizam or his minister responsible for these evils; situated as they are, I do not think they had the power to correct them, in fact, we may, perhaps, more properly be regarded as responsible for them. Having the power in our own hands to remedy them, and having shown that we are in no ways scrupulous about making use of that power when we thought fit to do so. &c. &c. &c."

The British Government responsible for the evils of the Nizam's Government

18. Sir Charles Metcalfe states, "When I was minister at Hydrabad I made several attempts to reduce the expense of this force (the Contingent). A regiment of regular cavalry was discharged; the rest of the cavalry was reduced in number; some staff appointments were abolished, but all to no purpose as to any relief that it afforded to the State finances. The minister (Chundoo Lall) squandered the amount thus saved, and so he will do with respect to any reduction of expense that can be effected."

Sir Charles Metcalfe's opinion. Minute in Council, 6 March 1832

19. General Fraser, treating on this always embarrassing subject, in his Despatch to the Government of 26th July 1842, says:

General Fraser's opinion.

"If the Nizam is permitted to retain the impression of his being absolutely and actually independent, it is not impossible that, besides other evils which may arise, we shall experience one of great magnitude in a proposition on the part of his Highness for the disbandment of the Contingent," to which he is known to be averse, "and of which neither the continued maintenance nor the original organisation are provided for by any existing treaty."

Nizam averse to the Contingent

Here the Resident testifies to the aversion of the Nizam to a body of troops which we nevertheless persisted in upholding and paying for at his expense.

General Fraser's further opinion.

20. General Fraser further observes: "An amount of nearly 40 lacs of rupees per annum, being nearly a third of the revenue of the whole country, is expended

Cost of Contingent nearly one-third of the Nizam's revenues.

expended for the maintenance of an army from which more aid and advantage might be looked for than has hitherto been effected."

Nizam's troops not subject to the Nizam's orders, unless by permission of the Resident.

Minister forced to employ other troops.

21. From the above combination of circumstances it very soon became the rule of the service, "that the Nizam's army, so long as it is officered by British subjects, is not to obey the requisitions of the Minister until he (the Resident) has first satisfied himself that their services are to be required in a just cause." The Minister was therefore under the necessity of employing another army, composed of Patans, Rohillas and Arabs, at an annual expense of 95 lacs of rupees, for the service of the State.

Nizam passive and helpless.

22 The origin and progress of the Nizam's troops under British officers has thus been shown in detail; and there can be no question whatever, even though the Nizam were constantly cognizant of what had been done by the British Government, that he was entirely passive and helpless throughout. The organisation, management, and entire control and disposition of this body of troops has been assumed by us, chiefly for the promotion of our own interests. I therefore protest against the sanction, by the Court, to the proposed measure of the Supreme Government to appropriate part of the Nizam's territory for the repayment of advances of money which we wilfully incurred upon our own responsibility, knowing as we did, that the resources of the Hydrabad State were inadequate to the annual cost of the body of troops under British officers upon the footing on which we had placed them.

23. Because the XVth Article of the Treaty of 1800, expressly secures the Nizam against our interference with his subjects or servants, the text being—

> "As by the present treaty the union and friendship of the two States are so firmly cemented as that they may be considered as one and the same, his Highness the Nizam engages neither to commence nor to pursue in future any negotiations with any other power whatever, without giving previous notice, and entering into mutual consultation with the Honourable East India Company's Government, and the Honourable Company's Government, on their part, hereby declare that they have no manner of concern with any of his Highness's children, relations, subjects or servants, with respect to whom his Highness is absolute."

Contravention of the treaty

Nevertheless our constant control of the Nizam's regular troops has been a continual contravention of the spirit of this article of the treaty

Control of pay arrangements.

Progressive expense

24. Because our control and responsibility were not confined to the military organisation of the force, but extended to all pay arrangements and contingent expenses, as is manifested in the progressive annual expense in which we involved the Nizam from 1807, when the reform of the remnant of Raymond's Corps first took place in Berar, under Colonel Doveton, to the present day. Colonel Doveton, who commanded two regiments of the Company's infantry, accompanied Govind Buksh when he was sent to supersede Mahiput Ram in the government of Berar Colonel Doveton was stationed with him to maintain his authority, and he was commissioned by the Resident at Hydrabad, Captain Sydenham, to effect a reform in the Berar Regular Infantry, which consisted of six battalions.

Cost of infantry in 1807

In Colonel Doveton's letter of the 28th January 1807, he reported that he had acted upon his instructions, and that the past and proposed future cost would be as follows, founded upon the monthly pay abstract of one of the unreformed battalions, viz., that commanded by the most respectable European in the Nizam's service, Mr. Elliott.

OLD FOOTING.	PER MENSEM.	REFORMED.	
	Rs.		*Rs.*
6 European Officers and 1,000 Men - - - - -	9,599	2 European Officers and 1,000 Men - - - - -	10,780
Cost of 6 Battalions monthly -	59,594	Cost monthly of 6 Battalions prospectively - - -	64,680
Cost of 6 Battalions annually -	6,91,128	Cost of 6 Battalions annually -	7,76,160

so that the prospective annual cost of the reformed infantry was less than eight lacs per annum. Owing to the horse being added to the Contingent in 1817, and successive additions of brigadiers and other staff officers, the annual cost has ranged from 21 lacs since 1816-17 to 42,66,185 rupees, including 2,70,791 for civil disbursements in 1828, to 39,16,074 rupees on the 1st January 1848, according to the following statement, the infantry costing roughly 12 lacs, the horse 17 lacs, the artillery, pioneers, &c., 5½ lacs, and the staff, the very large and disproportioned amount of 2,88,960 rupees, and the military and medical stores 1½ lac; total 39 lacs, instead of eight lacs in 1807.

RETURN of STRENGTH and COST of the NIZAM'S TROOPS under British Officers, by the Resident General *Fraser*, 1st January 1848.

	Officers		Strength	Total of all Ranks	Monthly Cost	Annual Cost
	Europeans	Natives				
					Hy. Rs. a. p.	*R.*
1st Regiment Cavalry	2	13	521			
2d ditto	3	24	521			
3d ditto	3	25	520			
4th ditto	4	22	520			
5th ditto	3	24	520	2,997		
Cavalry Total Cost	- -	- -	- -	- -	- -	17,14,994
Artillery 6th Company, Pioneers, &c.	3	12	713	1,099	- - -	5,55,330
1st Infantry	3	17	704			
2d ditto	5	16	704			
3d ditto	4	16	704			
4th ditto	5	16	704			
5th ditto	5	17	704			
6th ditto	3	17	704			
7th ditto	4	17	704			
8th ditto	5	17	704			
Hill Rangers	1	3	167	6,710		
Infantry Total Cost	- -	- -	- -	- -	- - -	12,63,483
STAFF						
1st. Brigadier General Tweenlow	- -	- -	- -	- -	2,543 11 8	
2d. W. P. Beatson, K. L. L.	- -	- -	- -	- -	2,198 4 9	
3d G. F. Hampton	- -	- -	- -	- -	2,249 9 11	
4th. C. M'Kenzie	- -	- -	- -	- -	807 8 7	
5th J. Johnston	- -	- -	- -	- -	1,922 14 8	
And 7 other Officers of Staff, and 80 European Officers, including 9 pensioned and medical officers	- -	- -	- -	21		2,88,960
Pensioners	9	- -	- -	1,693	- - -	1,53,457
Military and Medical Stores, &c.						
				12,430		
				TOTAL Annual	- *Rs.*	39,16,174

	Hy. Rs.	*a.*	*p.*	
5 Brigadiers	9,722	1	7	Monthly cost
80 European Officers	51,007	11	11	ditto.
Grand Total	60,729	13	6	or 7,28,358. 2. per annum of European Officers.

This Return shows that the annual cost of European Officers in 1842 was equal to the total cost of the whole Infantry in 1807.

25. The original arrangement for the payment of the reformed force has long since terminated. In 1817 the payment of the troops in Berar was under an agreement with the Nizam, undertaken by the house of Palmer & Co., of Hydrabad; this arrangement the Court interfered with, and ordered to be discontinued.

Court interferes with mode of payment of the troops.

ebts to other editors.

On the 21th May 1820, the Court directed the Supreme Government to instruct the Resident at Hydrabad to refuse his sanction to any further pecuniary arrangement between the house of Palmer & Co. and the Nizam, the object of which arrangement had been chiefly for the payment of that part of the Contingent stationed at Hydrabad, and again, on the 21st November 1821, the Court ordered Messrs. Palmer's money transactions, called the Arungabad arrangement for the payment of the troops, to be closed.* The Supreme Government, in letters the 16th and 20th October, and 20th December 1822, informed the Court that its orders had been obeyed. Chundoo Lall, the minister, had been in the habit of borrowing money lavishly from Messrs Palmer's house, at the rate of 25 per cent., to the extent, with interest, of 65 lacs, which, on the 20th July 1822, had increased to 83,04,569 rupees, and the debts of the Government to other creditors were 46,34,509 rupees The Supreme Government, in the 54th paragraph of their Despatch of the 20th December 1822, informed the Court that the extreme embarrassment in which the minister at Hydrabad found himself consequent upon those debts,† had induced him to apply to the British Government for aid, and the result was, that the Government consented to grant a loan of a crore of Calcutta sicca rupees at six per cent, upon the security of the peshcush of seven lacs of Madras rupees, and upon certain districts. There was not, however, a total absence of suspicion of collusion between Chundoo Lall and Palmer's house This loan and redemption of the peshcush put an end to any further payment to the Hydrabad division of this force from it, and the resumption of the Ellichpoor jageer, made the whole force dependent upon the minister for the time being, to provide funds from the revenue of the State; in fact, substituting an uncertainty for a certainty for the payment of part of the troops. The extreme financial difficulties of the minister induced him from time to time to urge a reduction in the expense of the force, and some curtailments in consequence took place in the military disbursements between 1828 and 1838.

ide Despatch,
upreme Govern-
nent, 20/12, 1822

Extreme financial ifficulties of the minister.

Annual cost in 1828 - - - -	*Rs.*	42,66,185
" 1837 - - - - - -		37,69,388
But in 1848 it increased to - - -		39,16,174

Pay of troops falls into arrears.

23 April 1842.
25 April 1842.
26 April 1842.
Complaints of minister.

Supreme Government gives consent to advances of money.

Of late years, however, the troops had been allowed to fall four or five months into arrears; and on the 2d May 1842, the Resident, General Fraser, wrote to the Supreme Government that the irregularities were such as to threaten serious consequences, and as it was impossible to allow their pay to be contingent upon the minister being able to raise money, he asked permission, in cases of sudden stoppages or other difficulties, to make advances of money. He then detailed repeated communications with the minister, through Captain Malcolm, in which the appeal of the minister on the subject of his financial difficulties, his total inability to raise money and at the expense of the force (the perusal of which excites painful feelings), and the Resident finally asks to make advances from the British treasury of two months' pay, there being, however, at the time a balance in the treasury to the credit of the Nizam of 1,09,000 rupees. The Supreme Government gave its consent to advances only in the cases

---

* *Note.* But our interference went the length even of the Resident, Mr. Metcalfe, making a tour of the provinces, with a view to a recommendation to the minister for a settlement for a term of years of the land revenue; and on the 7th November 1821, he reported to the Supreme Government "the settlement and limitation of the revenue"

	Rs.
† *Note.* At this period the estimated revenues, including the peshcush, were -	1,89,33,553
Expenditure, inclusive of interest on debt - - - - -	1,75,11,400
Surplus applicable to debt - - - -	*Rs.* 14,22,153

cases mentioned by the Resident, which have, nevertheless, continued until the Nizam has been brought in as a debtor to the amount of 70,77,416 Hydrabad rupees.

26. Because, admitting that the debt were founded upon a legal, equitable, or moral basis, it militates against the high character of the British Government for justice and generosity that a prince who, on more occasions than one, when the chief native powers in India were in confederation to crush the British power, proved himself a faithful and efficient ally, should not experience the utmost degree of forbearance on the part of the British Government

27. Because the exaction of payment of the debt involves the British Government in the obloquy of condemning to ruin, not only the Nizam himself, but all the other creditors of the Nizam, some of whom advanced money for the payment of the Contingent, precisely as the British Government has done, particularly in the instances of the Parsee bankers, Viccajee Mujee and Pestonjee Mirjee, to the amount of 34,73,440 rupees, who have as legal and equitable and moral a claim against the Nizam's Government as ourselves, and are just as much entitled to be repaid.

All other creditors condemned to ruin

Debts to Parsee bankers

28 Because the severe measures proposed to the Government of India are a mockery of the tone, professions, objects, and spirit of the treaty of 1800, which, in Article XV, holds the following language. "As by the present treaty the union and friendship of the two States are so firmly cemented as that they may be considered as one and the same" And Article XVII holds the following language: "By the present treaty of general defensive alliance, the ties of union, by the blessing of God, are drawn so close that the friends of one party will be henceforward considered the friends of the other, and the enemies of the one party as the enemies of the other." Nevertheless, our acts militate in every sense against such professions.

29. Because the use and employment of the Nizam's own troops under British officers have been refused to him by the Resident at Hydrabad, on various occasions, when the Nizam's interests demanded their employment. In 1850 the Resident reported serious disputes between the Nizam and Gholam Hussain Khan, of Ellichpoor; and on the 1st February 1850, the Resident reported that he had refused the aid (on the demand of the Peschar Rajah Ram Buksh) of the Contingent to enable the Nizam to crush the anarchy which prevailed. He also refused the aid of the Contingent when called upon to assist in removing all chiefs of the military classes from the jaghirs they held, and when the Nizam's Government also applied for the aid of the contingent to remove Sultan Newas ool Moolk from his jaghir, the Resident refused, unless he could have a personal interview with the Sultan, which the Nizam refused to grant. The aid of the Contingent was also refused to effect a settlement between a zemindar and zemindaree, at Bahdrachellum.

Use of troops refused to the Nizam

30. Because the Despatch does not give specific instructions to the Supreme Government for the immediate adoption of measures of retrenchment in the cost of the Contingent, or for such amicable arrangement with the Nizam as may save him from impending ruin

For the above reasons, I protest against the Court's Draft, No 863

East India House, 19 November 1851. (signed) *W H Sykes.*

(No. 776.)

Dissent by Major *Oliphant* and Others.

ffairs of the
izam.

I CANNOT concur in the Despatch which passed the Court on the 19th instant, in regard to the debt due by the Nizam, for the following reasons: Because, in approving the measures of the Governor General for enforcing payment of that debt, by which the finances of the Nizam's Government must be still more seriously embarrassed than before, it appears to me that this Court, instead of reiterating in general terms the necessity of retrenchment, which experience has proved to be of no effect, ought to have taken into its consideration the whole question of the administration of the Government, with the view of suggesting to the Governor General some definite measures of reform which the Resident, under his orders, should have been instructed to press upon the Nizam's adoption by every means in his power short of absolute compulsion.

I venture to think that such a course of proceeding would be a legitimate exercise of our power; and I am persuaded that the concurrence of the Nizam could be obtained to any measure which his Highness believed the British Government was really anxious to carry into effect; nor in doing this need the Nizam's authority be set aside In the same way that the Contingent has become a most efficient body of men by the introduction of British officers to reform and discipline them, so with equally beneficial results might similar agency be employed in concert with the Nizam's minister for the reform of the civil administration of the country; good government would take the place of disorder and misrule; the necessity of keeping up so large an army would no longer exist. The services of the Hydrabad subsidiary force would, according to treaty, be available should any emergency arise, and turbulent bodies of retainers would be gradually discharged in proportion as life and property became secure.

East India House,
26 November 1851

(signed) *J. Oliphant.*

I concur,

(signed) *John Cotton.*
Wm. Dent.
John C. Whiteman.
H. T. Prinsep.
Robert Campbell.

(No. 775.)

Dissent of Lieutenant General *Caulfield*, C. B, from the India Political Draft, No. 863, relative to the Affairs of the Nizam.

BECAUSE his Highness having complied with the demands of the Governor General, the time appears to have arrived for our going fully into the affairs of Hydrabad, as that principality has seemingly reached a crisis that must terminate disastrously or otherwise, as we may withhold or afford it our assistance.

Subsidiary force,
0,000; contingent,
0,000.

Because after a patient and dispassionate review of all our proceedings in connexion with Hydrabad from the period of his Highness's subsidiary alliance with the British Government, I am constrained to declare my painful conviction that it is deducible from the records of this House, that the anarchy which prevails in the State of Hydrabad, in which we have a regular army of 20,000 men, together with the impoverished condition of the Exchequer, may fairly be attributed to the injudicious exercise of British influence in the affairs of that principality, as, notwithstanding all that may be said of constitutional rights and international law, as prohibitory of interference, it cannot be denied that neither of these barriers have proved a protection to Hydrabad when the views of our Indian Government invited interference, as is exemplified in the nomination of Rajah Chundoo Lall (in direct opposition to the Nizam's wishes), clothed with plenary power, to be naib to the minister, and exempt alike from his control, and that of his sovereign,* as verified by the avowed intention of our Resident to interpose the authority of the British Government, to shield Rajah Chundoo Lall from the unquestionable authority of the prince, in direct violation of a treaty binding us not to interfere with the Nizam's relatives or subjects.

Because we impose an unnecessary expense of 42 lacs of rupees annually upon the Nizam in maintaining a Contingent, organised, disciplined, and officered by us, to perform those duties which by treaty devolve upon the subsidiary force, and withheld its services from the Nizam on grounds that cannot be defended by the principles of international law or constitutional rights, and thereby render it necessary for his Highness to maintain, at a heavy charge (95 lacs of rupees) to the State a large and inefficient force, with a view to avoid vexatious interference, and afford employment to those of his adherents who have no other means of living

Because interference of a certain character, and to a certain extent, is absolutely requisite to enable his Highness to place his affairs in a train that will hold out reasonable expectations, that under a tolerably efficient minister he may be enabled, without our assistance, so to conduct his affairs as will ensure an improved condition of his State.

Because I do not consider that we are justified in requiring prompt payment by the Nizam under a heavy penalty of a debt, mainly created by measures concerted with a minister over whom in fairness he cannot be deemed to have exercised any control.

Because we have the means to aid his Highness in the reduction of his expenses to an extent that would enable him gradually to liquidate our demands, and without such a reduction it appears impossible for his Highness to maintain the integrity of his dominions, and satisfy the just claims of other creditors

Because, in my humble judgment, it is the duty of this Court to communicate, without reserve, its opinions and views on all matters of importance to our Governor General, without a knowledge of which he may frequently find himself placed in difficulties of a perplexing nature.

Because this Court cannot, by any possible procedure, divest itself of that responsibility with which by law it is invested, nor evade participation in the consequences arising out of the acts of a Government over which it is empowered to exercise a constitutional control.

East India House, (signed) *J. Caulfield.*
20 November 1851.

(True copies)

(signed) J. W. Kaye,
Secretary in Political and Secret Departments.

---

* *See* Protest of 10 East India Directors, No. 74, page 136 Blue Book, Affairs of William Palmer & Co., and the Resident at Hydrabad's letter in 1835, which says, "Those who have witnessed the course of our policy for these last 30 years, who have seen how we have put up the creatures of our own as ministers, and supported them against the sovereign, have obtained the control of the effective troops, and how we have assumed the civil control of the country, can hardly feel a doubt, least of all can the Nizam, that we have considered ourselves the actual rulers of the country."

— No. 2. —

From Colonel *A. Cotton*, Commandant of Engineers, to *T. Pycroft*, Esq., Chief Secretary to Government.

Sir,

I HAVE the honour to transmit a Memorandum, on the proposed railway in the Southern Mahratta Country, in obedience to the orders of Government dated 13th September 1858, No. 1878.

I have in many late papers respectfully requested the earnest attention of Government to this fundamental question, the question of how money should be expended for the material improvement of India.

This proposal of the Bombay Government seems to bring us fully to an issue on it.

Will three millions expended on a railway from Hydrabad to Beitkul, relieve that tract of country from its principal material evils on the one hand? or on the other, will it (as I think I prove) be the most effectual step that could be taken to prevent that tract from ever obtaining the essential benefits of cheap production and cheap transit?

Most certain it is, that if the latter is the effect of spending money upon a railway there, every additional million that is spent in this way is an additional obstacle thrown in the way of the relief of India generally from its main material evils! The railway interest is already very considerable, and its very existence depends upon its succeeding in depriving India of cheap transit, and it is absurd to expect that its influence will not be courted to resist that which is certainly directly antagonistic to it. And so also with respect to the other great fundamental point of finance.

Will this three millions if spent on a railway afford a great and important relief to the at present insolvent state of the Government? or will it add a further permanent burden of 150,000 *l.* a year? (for I doubt whether this railway will pay its expenses.)

This Government has in its most important Despatch of the 15th May last clearly declared the conclusion, which its ample experience had brought it to, that expenditure on hydraulic works was extraordinarily remunerative, and would afford a complete relief to the finances.

Such a declaration from the only authorities in India who could give it from their own knowledge and experience, seems to me to be of the very first importance, but not second to it (I think) will now be as decided a protest against the proposed extension of the railway system to the Southern Mahratta Country, if, as I cannot but hope, the facts and arguments of this Memorandum are sufficient to satisfy them that my conclusions are in the main sound, as to the effects of such a work in that locality.

I look upon this opportunity as one of the most valuable that could be offered to India's authorities. A decided stand now made will certainly secure at length a real examination of this vital point, and I am quite sure nothing more is required than a real examination to satisfy everybody who is willing to be satisfied about it.

The late Secretary to the Government of India in the D. P. W. was certainly right when he protested against "adverse discussion" on the railway question; nothing but its suppression could secure the further expenditure of millions on works which would shut out India from cheap production and cheap transit, and thus effectually prevent it from meeting other lands on equal ground in the markets of the world.

Memorandum of Colonel *A Cotton*, on the Bombay Minutes of the Members of Council on a Railway from Beitkul Harbour to Hydrabad, prepared in obedience to Orders of the Madras Government, 13th September 1858.

The order transmitted to me with these minutes so clearly requires my explicit opinion on the subject, that I trust I shall be excused in stating opinions so entirely opposed to those expressed in all the Bombay minutes I regret that I should differ so entirely from those so much superior to me both in office and knowledge of other matters; but as my whole attention has been given to engineering matters, and especially to this subject of communications, and I have had such peculiar opportunities of investigating the subject both from the information of others, and from that I have obtained from works with which I have been more or less connected, I am in hopes that I may be allowed to give an opinion without presumption on such a matter, even though contrary to the views held by those who have not such professional knowledge and experience

I may premise that all these minutes are written on the grounds, as if already established, 1st, that railways in India will be profitable speculations, 2d, that they will be more profitable upon the whole, that is, directly and indirectly than any other way of spending the same money, 3d, that they will answer the purposes of the country as communications, that is, that they can carry the great traffic of the country, that they can do what is required for that purpose, both in respect of goods and passengers, and in respect of cost and quantity

The minutes take it for granted that railways are such communications as will meet those three evident demands. What I beg to submit is, that they thus, in fact, beg the whole question

This is certainly in accordance with what has been done by others respecting railways They were entered upon without the slightest investigation on either of the two latter points On the first, indeed, there was a sort of inquiry, but no "adverse discussion" was allowed, and in consequence the calculations were never tested, and in my opinion, which is supported by present results, they would not have stood any test. I have not seen even a calculation of the cost of working a railway in India, and I have every reason to believe that there was no careful investigation of this fundamental point. I have not the original papers about the Bengal railway with me, but to show how loosely the whole subject was handled, I may mention that in the calculation of the present cost of transit by the river, two of the items allowed were interest and insurance on an average value of goods at 40 *l.* a ton for the whole traffic, the great mass of the traffic being grain, &c., value from 3 *l* to 5 *l* a ton, so that probably the average does not exceed 6 *l*, thus making a miscalculation in these items of seven to one

As to the great question whether railways were the communications that were suited to the particular circumstances of India generally, or of certain parts of it, it was never, I believe, raised at all

It seems to be a peculiarly suitable time to examine these points, so intimately connected with the material welfare of India, now that actual results of the working of some railways in each Presidency afford in some measure sound grounds for our conclusions.

The question immediately before me seems to be, is it expedient to construct a railway (of course for high speed like those already constructed) from the proposed harbour of Beitkul to Hydrabad?

I conclude that this question may be fairly divided into the three above proposed, viz :

1st. Will a railway answer as a speculation?

2d. Is it a more beneficial way of spending money on that tract of country than any other?

3d. Will it answer its purpose, that is, will it carry such quantities and at such cost as the country requires?

The comparison of such a communication with other kinds, viz., with common roads, light railways and waterways, will necessarily be examined in the course of these inquiries.

With respect to the 1st question, in one of the minutes it is given as an opinion, " that it would be a very profitable undertaking as regards the company who carry it out," and in another, that " of the financial * * * value of it * * * * there can be no doubt."

Matters have now so far advanced that we may best form a judgment on this point by the actual results on the lines now in operation.

In Bengal the line from Calcutta to Burdwan, 120 miles, has been open three years I give in the Appendix returns of receipts and expenditure up to the end of last year.—They were

	Rs.
For 1857, Receipts - - - - - -	14,50,000
Expenses - - - - -	5,90,000
	120) 8,60,000
Profits per mile - - - - -	7,000

I don't know exactly the cost of this line up to the present time, but I believe it is about 1,20,000 rupees a mile, including rolling stock, &c., on which the apparent profit has therefore been six per cent.

But I must observe that the publication of the accounts in this way, though true in the letter, is calculated to convey an entirely false impression of the financial results; the two great items of the current expenditure on railways do not appear in them, viz, depreciation and repairs. For the first nothing at all is allowed, and for the latter a mere trifle, because there is not an old locomotive, or carriage or rail on the line; everything is new. It is therefore quite certain that this six per cent. does not represent the true profits on this line. What the actual cost of repairs and renewal will be in India we have no positive data; we can only form an estimate of it from such data as we have.

By a very complete account of the expenses, &c., of all the railways in the State of Massachusetts, in the United States, the best railway accounts I have been able to obtain, the average cost of repairs and renewal of the road only on 1,367 miles, is 2¼ per cent., and the total locomotive expense is 1½ per cent., so that adding for rolling stock, the total cost of repairs and renewal cannot be much under three per cent. there.

The report from which this is taken adds, " this experience of nine years' working cannot be very flattering to railway proprietors. The expense of keeping up the track, that is, of maintenance of way, has greatly disappointed expectation in America, as it has here" (in England). I should think, considering the great heat and heavy rains of Bengal, the cost under these heads will be greater than in Massachusetts. Allowing the same, it reduces the profits to three per cent.

Now in considering this result, we must remember that this, the first 120 miles out of Calcutta, is without any comparison, the line of greatest returns of any line that could be formed in India. Nothing like the great mass of passengers that go for a moderate distance to and from the most wealthy city of India, can be found at any distance from the great cities.

This is therefore an extreme case.

On the Bombay line I have not the traffic for any length of time, but the traffic receipts for the last half of June 1858, were 330 rupees per mile open (130 miles), or at the rate of 8,600 rupees per annum, 9½ per cent. if the road has cost 90,000 rupees, but I have no statement of the actual cost I cannot, however, I believe, be very far wrong in that sum. The per-centage of expenses upon gross receipts was, in 1857, about 47 per cent.; allowing the same for 1858, it will leave for profits just five per cent. This line is like that of Bengal, it is the first 130 miles out of a great city, and the accounts include no sufficient sum for repairs and renewal, in consequence of everything being new. But this calculation also omits the cost of the Bhore Ghaut, I hear about 80 lacs, which would add about 60,000 rupees a mile to the cost of the whole 140 miles, of which the road will then consist; and the above profits on 150,000 rupees a mile would be only three per cent., and deducting from this three per cent. for repairs and renewal, there would remain no profit on this, one of the great lines, the first 140 miles out of one of the capitals of India. If the cost of the Bhore Ghaut is distributed over a greater length of line, then we must allow diminished receipts; for the average receipts of 400 miles, for instance, from Bombay, cannot equal the average of the first 130. On the Madras line of 96 miles out of Madras, the present receipts are on an average about 90 rupees a week, or 4.700 rupees a year, seven per cent. on 70,000 rupees a mile, and allowing the same proportion of expenses as last year, the net profits would be 3¼ per cent., and deducting here also three per cent. for renewal and repairs, ¼ per cent.

It is, in my opinion, impossible to mistake in the conclusion to be drawn from these actual results on three different lines, immediately adjoining three of the capital cities of India.

It is commonly said that the traffic will increase as the lines extend. It will undoubtedly increase on the part now worked, but the average of the whole will diminish. It cannot be imagined that the traffic on the second and third 100 miles from a capital will not be greatly less than on that of the first, and therefore if the whole of such traffic were added to the first, it would not very greatly increase the average, but in point of fact by far the greater part of the traffic of each portion will be local traffic, and will not affect that of the other portions. Of course, up to a certain distance, the average traffic will increase, because an extremely short line will not draw the whole traffic even of the tract through which it passes, but it is impossible that the average of 500 miles from a capital can equal that of the first 100 miles.

I therefore submit that these results are alone quite decisive as to the question of great railways being profitable speculations in India while in its present state of wealth, and consequently that we have far stronger proof that on the particular line here proposed, not leading to a capital, even anything like interest for the capital can be obtained.

Further, we have the results in England. The net profits, according to the returns, are now just 4 per cent. on the capital, and the average cost about 35,000 *l.* per mile. Certainly the average cost of railways in India will be only about a quarter of those in England; but if we compare the enormous disproportion of wealth in the two countries, it is also certain that nothing like one quarter of the number of travellers could afford to use railways here at English charges. We cannot be wrong, therefore, in concluding that throughout India railways will not make such profitable investments as in England

Again, in Massachusetts, where the average cost was only 9,000 *l.* a mile, the profits were 6¼ per cent., and the wealth of the community there is of course many times that of India. Also the value of money there is much less than in India, and the 9,000 *l.* a mile represents a less capital than 90,000 rupees invested in India.

I must also observe, that there is great doubt thrown upon English accounts, as there must be till there are independent Government inspectors appointed to examine them. Almost all the lines are making very small dividends, some, as the Great Western at this time, none at all; and of course, in such a state of things, there is a strong bias on all concerned to put as much as possible of the expenditure to the item of new capital, and also to have large sums under the head of unadjusted accounts, both which must necessarily cause considerable doubt as to the reality of the sums set apart for dividend.

Thus, the following railways have added these sums to their capital account in the last half year:

	£.
London and North Western - - - - -	454,000
South Western - - - - - - - -	225,000
Great Western - - - - - - - -	62,000
Brighton - - - - - - - - -	35,000

And the following are outstanding accounts:

	£.
London and North Western	469,000
Manchester and Lincolnshire	258,000
Lancashire and Yorkshire	230,000
Great Northern	143,000

While such enormous items as these appear in accounts which are not inspected and publicly reported on by Government officers, there must be great uncertainty that the present dividends will be supported

By a letter in the Railway Journal, 15th May 1858, it appears that 20,000,000 *l* have been added to the capital of the Great Northern in 10 years; that while the gross receipts had increased by 730,000 *l.* the dividends had fallen from 10 to 4¾ per cent., the goods traffic having increased from 900,000 tons to 5,000,000 Of course no other possible conclusion can be drawn from this than that even after charging 20,000,000 *l.* to capital in 10 years, the increase of goods traffic has still caused an enormous loss. Without, therefore, a strict inspection of accounts by officers publicly responsible and totally unconnected with any individual railway, we cannot be certain that current expenses are not charged to capital. From all the information I have been able to obtain, I have myself no doubt that the real profit on English railways is considerably under 4 per cent.

I must also particularly notice the fact above stated, which is common to many English railways, viz, continual increase of receipts with a constant diminution of dividends. There is, of course, also a strong bias in all concerned, in order to keep up the appearance of prosperity, to show an increase of receipts, and hence to carry at losing rates, and that this is done is certainly proved by the above fact Consider also the following admission in an editorial in Herapath's Railway Journal, the great advocate for railways: "In many railways we have noticed that during the last half dozen years (and in some cases longer) they have spent each half year" (as capital) "sums about as large as the profits paid away in dividends."

The consulting engineer of the Madras Railway showed in his last half-yearly report that there had been a clear loss both on 1st class passengers and on all goods, though the latter are carried at an average rate of 10 *p.* (1¼ *d*) per ton per mile, and though nothing is allowed for depreciation, and of course only a small proportion for repairs, as all is new there also. The results of the Madras Railway up to the end of 1857, were as follows:—Length 81 miles, cost without rolling stock for a single way, 53,000 rupees Receipts 104,000 rupees for the half year; expenses 56,000 rupees, or 54 per cent., which, on a supposed total cost of 70,000 rupees a mile, would be a nominal profit of ¾ per cent., or for the year 1½ per cent., and allowing 3 per cent. for renewal and repairs, a loss of 1½ per cent

It seems to me impossible that there can be any question after this investigation, as to the line from Beitkul to Hydrabad being profitable. If none of the lines immediately adjoining the three capitals pay even merely the guaranteed interest, we have the most certain grounds for concluding that this line, in an out-of-the-way part of the country, will not do much more than pay its expenses, if it does that. I do not see how we can be mistaken on this point. These data are surely quite sufficient to establish it.

Before proceeding to the other two points, I may here properly refer to a minor one started in these minutes, viz., as to how a line can be laid out, so as not to compete with the Bombay line. It seems to me most certain that whatever line is laid to Beitkul must be a directly competing line with that to Bombay. Beitkul will become a large port and city, and will, even with a railway, draw off a very large proportion of the traffic both in goods and passengers from the Bombay line. I cannot see how there can be any question about this. Any line running from a certain tract of country to a port must compete with all other lines in that part, whether it runs nearly parallel to them or perpendicular. The only question with the producer and the merchant is, how he can get his goods cheapest to the port; and the passenger traffic must follow the line of the goods traffic in India, and it does not matter to them whether the line runs to a port due north, or due east or west Thus, the North and South Canals at Madras compete directly with the railway, although they run perpendicular to it, because the people of Madras do not care whether their consumable articles come from districts west of Madras, or north and south.

The proposed line, therefore, while it will not yield profit itself, will undoubtedly greatly diminish the traffic on the Bombay line.

My second question is, Is this railway a more beneficial way of spending money on that tract of country than any other?

Surely this is only a question of common sense. The grand object is to promote the material improvement of the country; it is for this that capital is spent on public works. Surely, if we are going to spend a million on a certain tract, we should all conclude that we had made a great mistake, if we afterwards discovered that, as we had spent it, it had only yielded one per cent of total benefits, while a more judicious mode of spending it would have yielded 100 per cent.

I append to this memo. a report on the traffic on the Bengal Railway, with some remarks I made upon it, at the desire of the Lieutenant Governor of Bengal, together with a comparison of the actual cost and results of that railway, and an estimate of those of a canal on the same line I give this as a striking illustration of the effects of taking a work in hand without properly examining this point From this it will be seen that there is good ground for believing that even on the present traffic there would be a saving of 15 lacs a year, taking together the profits to the shareholders and the diminished cost of transit to the public, and, probably, including the new traffic that would be produced by the lower rate of transit, not less than 25 lacs a year, had a canal been constructed on this line instead of a railway, and that had the same money that has been spent on this 120 miles of railway been spent on waterways, it would have been ample to provide all Bengal with a complete system of such waterways of several thousand miles, conveying both passengers and goods at 1-5th or 1-10th of the railway rates.

I cannot but think this is a sufficient example to warn us against entering upon such an expenditure as is now proposed without first examining the matter in this point of view. - What possible object can there be in spending money upon the country in a way that will yield one per cent. if we could spend it in another that would yield 100? and of course we are liable to do this if we do not first make inquiry.

Even if it were settled that the most profitable expenditure would be on communications, it would remain to consider on what kind of communications in that particular tract of country; for instance,—

Whether on Common roads,
Light railways,
Heavy railways,
Canals, or
Rivers.

It will be sufficient for our present purpose that for the cost of a mile of heavy railway, we might have—

16 miles of road,
10 or 15 of light railway,
15 or 25 of canal, or
25 of improved river navigation.

Now, surely, this is a real question. Tried by the test of direct and indirect profits, which I am convinced is the only true test of such expenditure, nobody could doubt that any one of these works would be many times more profitable than the same money expended on a heavy railway, in the actual circumstances of that tract of country. And I must again observe that no road or railway can carry the quantity required on a main road in India.

But there is also the question of irrigation, particularly as that can be combined with navigation in the same works. Suppose that 400 miles of railway were to be laid at 80.000 rupees a mile, costing 3¼ millions sterling, and that for the same money, at 10 rupees an acre, 3¼ millions of acres could be irrigated. The cost per acre in Rajahmundry is only about four rupees; and with respect to the value of the increase of produce, Captain Meadows Tayler shows that in those countries the ryots water their lands at an average cost of 27 rupees an acre per annum, showing that the value of produce must exceed that In Rajahmundry we reckon an increase of 16 rupees on one crop. At this latter rate, the increased value of produce on 3¼ millions acres would be 500 lacs a year. But this would at the same time provide, probably, at least 2,000 miles of canal navigation, besides connecting, perhaps, as much more of navigable rivers. Can there be any comparison between the benefits to be derived from the money so expended and those of the same sum expended on a railway, and what can possibly be said why a railway should be constructed in preference?

As I have quoted the case of the Bengal Railway, so also I may mention that of the Bhore Ghaut. It is said to cost 80 lacs; the direct distance is about six miles, but it is lengthened to 13, to obtain the required gradients. Now compare the results obtained in this way with the same sum to be expended on irrigation from the Kistnah and Godavery. The results there will be 2,000,000 of acres irrigated, and more than 2,000 miles of navigable canal and river. The increase of produce alone will be on an average of 20 rupees an acre, including some two-crop land, 600 lacs a year, besides 2,000 miles of communication conveying goods at one pie a ton a mile.

I cannot but believe that when these things are pointed out, it will be acknowledged that in future they warn us to consider this question: Whether under the present circumstances of India it is wise to spend money in one way rather than another? This one ghaut has saddled India permanently with a charge of four lacs a year, while the same money might have certainly yielded a relief of 40 per cent., or 32 lacs a year, to the finances, and have left an enormous amount besides in the hands of the landowners. Were India like England, overloaded with wealth, and covered with almost every kind of public works, it might be a question whether we might not amuse ourselves with spending three quarters of a million upon six miles of ghaut; but while the country is so poor, almost entirely without public works of any kind, and insolvent in its finances, I must insist upon it that the question whether we are going to spend our money to something like the best advantage, is an essential one in every proposed work. Whether the work we are setting about will, like the Bhore Ghaut, be a great addition to the burthens of India, or whether, like the same sum spent in the hydraulic works for irrigation and navigation in Rajahmundry, Masulipatam and Guntoor, it will be both an immense relief to the part of the country improved by it, and at the same time not only provide its own interest, but also afford a very large relief to the finances of India, already at least 10 lacs a year, and there is every reason to believe when the works are completed, much more than half a million sterling a year.

I come now to the 3d question I have proposed, viz.: Will this railway answer its purpose; that is, will it carry such quantities and at such cost as the country requires?

Is a railway the kind of work that will effectually carry the great traffic of a country?

This I urge is the question—not, Will it carry a small portion of the passengers and goods that ought to be moved at a high speed and a high price, and that only at the cost of taxing the country in other ways to pay for this advantage? From the data and calculations above offered, I conclude certainly, that, supposing on the 350 miles now at work at Bombay, Calcutta and Madras, 2½ millions sterling have been spent, and that the *bonâ fide* profit does not on an average exceed two per cent., there is already a clear addition to the burthens of India of 7½ lacs a year, which must be paid by additional taxes of some kind. And every additional million, as it is expended in such works at a greater distance from the capitals, must entail a greater loss. On the 30,000,000 already guaranteed, we cannot suppose less than an average loss of three per cent, or nearly a million sterling, thus doubling the previous average deficit in the finances of India.

I return, therefore, to the question I propose myself.

Let us on this point go upon the same safe ground as in examining the former questions, viz. the results on the Indian lines already open.

First, the Calcutta line. The total number of passengers per annum is something above a million, but they travel, on an average, only about 30 miles or a quarter the length of the road (*vide* Appendix A.), so that the average number travelling the whole length is 250,000, or 800 a day, on the first 120 miles out of the chief city of India, on the main line leading to the interior From the vast numbers who travel in the populous parts of India, even without any facilities, we cannot be wrong in supposing that, on such a line as this, if they were carried cheap enough to meet the actual necessities of the people, this is not a tenth part of the number that could and would travel along it On one of the four main approaches to Madras, 3,000 a day travel on one of the main roads In Tanjore, away from any great city, 1,200 men a day, over a bridge three miles from Trichinopoly, a city of 100,000 inhabitants, 20,000 people a day pass. We may confidently conclude, that if on those lines there were cheap facilities for travelling, these numbers would be greatly increased I cannot think, judging from these and many other such facts, that less than 10,000 would travel on the first 120 miles of the Great North Western Line out of Calcutta, if they could be conveyed at prices suited to the state of the country

On the Madras line the number is 250 per day on the average of the whole line, and the consulting engineer says in his report, dated 15th December 1856 · " If Mr. Fletcher will take a trip any new moon on his own rail, he will find ocular demonstration to the contrary. He will find many travellers of both sexes, but very few of them on the rail, though the charge is reduced to 4 pie a mile." Again: how does he account for all those crowds of people walking or driving in bullock carriages along the road to Trivelloor on occasions of festivals. The railway authorities are prepared to give, and do give, any amount of special accommodation on those days, yet the people walk They give them the means of going and returning the same day, yet they walk 26 miles and back, and probably lose three whole days in doing it "

Again, " The rate (4 pie) is altogether too high; it is too high, whether we consider the condition of the people, the value of money, or the cost of the line " Again, " The mass of the people do not travel on the line, yet they do travel, on foot and in bullock carriages." Again, " The actual results are notorious. As a rule, none but the wealthier classes of the native community have travelled by this rail. On all occasions of feasts at Trivelloor, which lies close to the rail, and at 26 miles from Madras, a common and very inferior road, running nearly parallel with it, has presented to the railway officials the unsatisfactory spectacle of thousands of people, some in bullock carriages, others on foot, passing to and fro between that town and Madras " All these quotations are not from opponents of the railways, but from one of their strongest advocates. Colonel Pears wrote a book two or three years ago, strongly advocating railways as the works which were best suited to the country

That is, the railway so far from accommodating many who could not travel before, carries only a small proportion of the numbers of previous travellers

On the Bombay line the numbers were 2.000 a day, and, as the average distance travelled was 24 miles, or rather more than a quarter of the whole length of the line, the average number for the whole distance was about 550 a day, of which the 1st and 2d class together were only 1-20th part, or about 30 a day.

The results of the Bombay line up to the end of 1857 were, length 88½ miles, of which double 33, single 55½ miles. Average cost, 91,000 rupees a mile. Receipts per mile, 4,000 rupees; expenses, 1,900; nominal profits, 2,100 rupees, which, on 91,000 rupees, gives, per annum, 4⅔ per cent., and deducting from this 3 per cent. for renewals and repairs, it leaves 1⅔ per cent. for the probable real profits.

Captain Rivers the consulting engineer's remarks on this are: "The ordinary traffic for this half year is 21,000 tons. The railway had, at the close of this report, been open more than 18 months to the foot of the ghauts, and yet on

89 miles there is shown an average of 60 tons each way daily, a traffic insignificant, considering either the trade of Bombay, or the cost of the line, or the expectations which Government and the originators had in constructing it." But this remark supposes that the 21,000 tons were carried the whole length of the line. Probably they were not carried half of it, so that the average quantity carried along the whole distance could not have been 30 tons a day each way, or at the rate of under 20,000 tons per annum, a quantity insignificant indeed on the only land line leading into one of the capitals of India; and had it been 50 times as great, or 1,000,000 tons, which a communication on such a line ought to carry, it would still be of no consequence, while the goods are carried at a charge only a shade below that of the old means of transport.

The remark of the Bombay Government on this is: "The returns continue to show that the Company have succeeded in diverting only a very inconsiderable portion of the goods traffic of the interior, and strengthen the opinions of Government that the present rates operate injuriously to the Company's interest." But this supposes that the Company could afford to carry cheaper than it does, of which we have no proof. It is certain, from the lowness of the profits (probably not more than 1¼ per cent.), of which by far the greater part must be derived from passengers, that the profits on the goods, even at the present rates, are insignificant, but it is much more probable, that on this railway also (as the consulting engineer has shown to be the case in Madras) there is an actual loss in the goods traffic; the fault is not in the managers of the railway, but in the apparatus itself After all this enormous expenditure goods cannot be carried by it so cheaply as by the old means, without allowing anything for interest.

Compare these quantities carried by the railway on all the three most important lines in all India, the principal entrances into each of the three capitals, 20,000 to 30,000 tons a year on each, with the 150,000 tons already carried on the Coconada Canal, though it is hundreds of miles from any great city, and has not a town of more than 20,000 inhabitants anywhere near it, and though the supply of boats is so far from keeping pace with the demand, that the charges are three times as high as they need to be. There are no discussions there as to why the goods are not carried by the canals in preference to the old modes.

I must especially notice the utter insignificance of the number of first class passengers, those for whom all this enormous expense has been incurred; in Calcutta the average for the whole length of the line is 15 a day, in Madras 3. Now we may safely say that, excepting these, almost the whole of the remainder would prefer, if they could obtain it, a lower speed and lower charge; they only travel in this way because they have no choice, therefore speed is not a benefit to them, but because necessarily united to a high charge, a real loss. Probably nine-tenths of these travellers, if they could, would travel at half the speed and half the charge.

I must also notice that, after all this expense has been incurred, even the proposed object is not attained, viz., high speed. These railways are all worked at from 10 to 18 miles an hour less, after all, than the speed at which the Hudson River is worked by steamers. The reason is, that after the expense of construction has been incurred, it is necessary, in order to keep the bare cost of transit down even to the present high charges, to work at a moderate speed. Were there a steam-boat canal by the side of these railways it might be worked very cheaply at a higher speed than the latter. The charge on the Hudson is 2½ pies a mile for first class passengers, one-seventh of the charge on these lines, without allowing for the difference in the value of money in America and India, which is six or eight to one, so that 2½ pies there is not equal to ½ pie here, 1-36th of the charge here. And so also in England, passengers are carried at from $\frac{1}{11}$ *d.* to ½ *d.* per mile from London to Edinburgh, with all the expenses due to a very bad sea navigation, equal to from ⅔ to 4 pies per mile, and allowing for the difference in the value of money, from $\frac{1}{9}$ to ⅔ pie in India, and it is evident that on a steam-boat canal, these charges might be still reduced. Such is the difference between land and water carriage, even at high speeds

It is thus clear that at present the railways do not meet the wants even of the second class passengers, and they scarcely touch the third class at all.

Let us consider this point also by means of the charges themselves. In Calcutta the lowest charge is 3 pies (⅜ *d.*), this is equivalent to six times as much as at home, or 2¼ *d.* nearly, two and a quarter times the charge for the lowest class in England, and it is notorious that for one that has money to spare here, there are 10 there. To put the people of India on a par with those in England, the charge ought not to be reduced merely in proportion to the value of money, but below that. It ought to be under ½ pie per head.

On the Rajahmundry canals, the charge is 1 pie, and it is fully ascertained that this excludes by far the greater part of those who would travel; it is now proposed to reduce the charge to ¾ pie, in order to obtain greater profits. And, if the boats were worked by steam instead of by men, they could afford to carry at ¼ pie with a good profit; worked by men, and charging 1 pie, they are yielding now 30 per cent.

How grievous it is thus to see this enormous expenditure incurred, and, after all, the main wants of the country, as respects even passenger traffic, unsupplied by it. Even in this respect, what is wanted is, to convey from 5,000 to 10,000 persons a day at prices of from ½ to 2 pies, and whether they go at 10 or 20 miles an hour, whether it takes two or four days to travel 1,000 miles, is a matter of entire insignificance in comparison.

The certain consequence of the construction of a railway on the proposed tract will be that an insignificant proportion of those who used to travel will be carried at these ruinous charges, and that for this even, the country will have to be taxed in other ways to provide interest for the capital expended.

Secondly, let us consider the goods traffic. I urge that this is in reality the first point in the question of communications, in the present state of India. India is not in the position of the gentleman whose question is not about money, but how he may travel most speedily and with the greatest ease, but in that of the farmer, with whom the grand point is how he may get his produce to market at a charge that will enable him to sell it profitably. When India has by means of obtaining access to markets been enabled to sell its produce, and so secured more than the bare necessaries of life, then it might entertain the question of travelling with ease and speed, if the two questions were really separable; but they are not; the same means that will provide them sufficiently cheap transit for their goods will also provide them both speedy and pleasant transit for their persons.

We have, then, to consider the suitableness of railways as respects goods traffic, using the actual results on present lines for this inquiry also. First, on the Calcutta line. The total quantity of goods last year (not coals) was 40,000 tons, supposing that they are carried 50 miles, the average for the whole length of line would be 20,000 tons. The distance carried may be more than 50 miles, but the average quantity cannot be above 25,000 or 30,000 tons, which supposes the average distance to be 60 or 70 miles. But the highest of these numbers is utterly insignificant, even as respects quantity. Compare it with the water traffic to Calcutta. Compare it with the reported traffic in four months on the Nuddea rivers, 600,000 tons. I cannot find a memorandum of the total traffic on the two Calcutta canals, but unless my memory fails it is about 3,000,000 tons a year. The boats entering the circular canal alone were 170,000 last year, a year of confusion, probably containing 2,000,000 tons.

When we look at these quantities and see the railway carrying 1-60th or 1-100th part, it is clear that even as respects quantity it is a matter of entire insignificance. But when we examine the prices we find that even if it carried 50 times as much it would still be a matter of no sort of importance, because it carries at prices only just a hair's breadth under those at which the goods were previously carried. What does it matter whether the goods are carried by rail or by road, if there is no tangible reduction of cost? It has an appearance of being a point gained, when the rail succeeds in abstracting the traffic from the old modes of conveyance, but the change is no real benefit to anybody, that is, no benefit worth mentioning. In this case, suppose 30,000 tons have been transferred to the rail, and that there had been so great an actual reduction of cost as ¼ anna per ton per mile, the total saving to the public is 500 rupees a mile, or 60,000 rupees a year, an insignificant sum in comparison of an expenditure of 150 lacs.

But there is also a traffic peculiar to this line, viz., the coal traffic. It is evident that there may be anywhere a peculiar mineral traffic of this kind, which is in some important respects distinct from the general heavy traffic of the country, and each case requires separate consideration. This mineral was before carried entirely by the Damoodah, a small river flowing only a short distance, liable to sudden changes, and never affording a steady navigation, a river navigation, in short, of the lowest kind, for a great part of the year without water, and in the monsoon alternately in flood and very low. It also enters the Hooghly so near the sea that that river there is very wide and exposed, and the distance is 40 miles more than the direct line. The expense of transit on it is accordingly very high for water transit, viz., 6¼ pies per ton per mile of distance carried, and 8½ pies per mile of direct distance, while the cost on the Nuddea rivers is about 4 pies per mile of distance, and by the river and Soonderbunds 2 pies for grain, and it would be less for minerals. The coal trade up river to the Ganges is carried at 1 pie per ton per mile. The total quantity carried last year was 90,000 tons by rail, and 54,000 by water. The charges were 3 annas a maund = 5¼ rupees a ton by the latter, and 2 annas 10 pies = 5 rupees nearly by rail. Thus, as was stated for goods, the least possible difference is made, and were the whole of this ¼ rupee saved it would only amount to 22,500 rupees a year; but it is not; for at Howrah the coal has to be discharged into boats to be conveyed to the different points where it is required, so that the saving must be quite insignificant; and this is further proved by the fact that the difference of charge is not sufficient to transfer more than 3-5ths of the whole to the rail. There is thus the least possible benefit to the public by the change.

It is no fault of the railway management; it is the defect of the apparatus itself; it is like a man cutting up firewood with a knife, he must of course charge high. The fact is, the railway is not suited for this work. A canal on this line would certainly carry the coal at one pie a ton a mile, or 10 annas for the 120 miles, and thus save 4 rupees 6 annas per ton, or 5¼ lacs of rupees on the whole present quantity, and as such a reduction amounts to 60 per cent. on the cost of the coal at Calcutta, it would certainly cause a very great increase of consumption; and probably a saving to Calcutta of 10 lacs a year would thus be produced on this one article, were a suitable means of transit afforded, instead of much under 22,500 by the railway. By the present arrangement it is, in fact, just as if all the grain on a gentleman's estate was carried to market in carriages instead of in waggons.

This is a striking proof of the entire unsuitableness of railways for the heavy traffic of India, and is surely a warning to us in planning future communications.

We may safely say that Calcutta is paying 10 lacs a year in this one item for the privilege of having a magnificent railway to Raneegunge, and this is only a part of the loss, for a reduction in the price of coals from 9¼ rupees to 5 would give a vast stimulus to her in all sorts of ways, both to her internal trade, and to her external commerce. And what also is the loss to the coal-owners by this mistake? What the effect of cheap transit will be in India we have positive proof in the Rajahmundry canals. There the supply of new boats cannot nearly keep pace with the increase of demand. On the day I left Dowlaishwarum more than 80 boats had passed through the head of the main canal by 5 P.M., and 33 were waiting to pass the lock, more than 110 in one day, containing probably 1,000 tons. In the first year about 700 boats passed, in the last month more than double that number of much larger boats; this increase is in seven years. And this is in spite of increased charges, in consequence of the inadequate supply, and in a part of the country without even large towns, and hundreds of miles from any city.

But there is another great point in this matter, and which is in fact one of the leading questions on the whole subject of Indian communications; it is no other than this: What is the actual cost of carriage by railway? Most strange to say, I have not seen any discussion of this essential point in projecting those works; and yet most assuredly without a right decision of it, no right conclusion can be arrived at.

In the present case, how can we possibly settle the matter whether a railway ought to be constructed to Beitkul, without knowing at what cost it can carry? Suppose, when we have made it, we see 5-6ths of the old traffic still going by the roads, as we do in Madras? It is strange indeed that this point should not have been thoroughly investigated. In one of the Punjaub reports we have an example of the strange, loose way with which this essential point has been dealt with. It is there said, "It will now be proper to state briefly what the advantages of this line are likely to be." But in the following discussion, it is only said, "If the carriage by rail should be kept low, so as to attract commodities which can only afford to pay cheap transit;" and again, "the present water traffic would preferentially take the railway, provided always the cost of transit be cheap," and so on But not a word is said on the subject of what the cost would actually be at which the railway could carry. The carriage by river, with the present clumsy navigation by human power, is 5 pie per ton a mile, and it is certain it can be reduced, probably more than half. Is there from such data as we have, a probability that a railway would carry at 2 or 3 pie?

On the Calcutta line, I have only these data The receipts from coals were about 2,20,000, viz, 44,000 tons at 2 annas 10 pie per maund, and the total receipts were 7,50,000, the former 2-7ths of the whole. Now, we may be sure that the profits on the coal were less than those on the passengers, the one carried at 8 pie a ton, and the lowest passengers at 3 pie a head, or 5 annas a ton. And as allowing for repairs and renewal, the profits could hardly have exceeded 3 per cent, on the whole it follows that that on the coal must have been much less than 2-7ths of 3, or certainly not ½ per cent, that is, 60,000 rupees on 44,000 tons, or 1 rupee 5 annas per ton, equal to 2 pie a ton a mile, which would make the actual cost of carrying the coal, exclusive of renewals and repairs, 6 pie a ton a mile It seems impossible that it can be less than this.

On the Madras line there is a most careful examination of the actual cost by the late consulting engineer, and his result is above 6 pie a ton, without an allowance for renewals and repairs; and in the last report on six months' traffic there, there is shown an actual loss on the goods traffic, though the average charge is 10 pie.

Judging from these things, from the very low profits on the railways, even as the accounts are now kept, from my knowledge of the cost of carriage in England and America (for instance, the above case of the great diminution of profits on the Great Northern, attending upon an enormous increase of goods traffic, showing indisputably a positive loss upon the goods traffic at the rates there charged) judging from these and other things, I must say, that at present there is no indication whatever that these high-speed railways in India will carry at less than 8 pie a ton, a mile; more likely 10 pie for bare cost of carriage, without any allowance for interest.

The one fact, that the Madras Railway has failed after two or three years trial, to take more than a small part of the traffic off the common road by the side of it, " and that not a very good one," is a fact that speaks pretty plainly, and we may be quite sure that rather than suffer such an opprobrium, all the parties connected with the railway would strain every nerve, and be under a strong influence to carry at the lowest possible charge.

I cannot but think that these facts and reasonings will be conclusive as to the necessity of a careful investigation of this essential point, before the Beitkul Railway is decided upon.

But this is by no means the whole of the question. It is not whether the railways can carry at 8 pie or 10 pie, nor even at 4 pie; it is, do we not require to carry at a much lower cost than the lowest of these? Even 4 pie will not answer the purposes of the country. We have to carry goods of a very low value, hundreds of miles, and we must have very low rates, or India's resources will not be developed. A charge of 4 pie on 500 miles is 10 rupees a ton, which would be 30 per cent. on the value of grain for instance, probably the great bulk of the traffic Wheat, in Goandwanah, costs 8 rupees a ton; such a charge as 4 pie would more than double its cost; thus we should throw away our peculiar advantage of cheap production, if we only have a means of transport of 8 or 10, or even of 4 pie a ton; we must have transit at half or 1 pie a ton a mile, if possible.

And further, this transit we can have; we have abundant proof that on a good steam-boat canal, traffic can be carried on at a rate not exceeding 1 pie; even on the Hudson, where men earn 1½ or 2 rupees a day, the goods are conveyed at 1⅓ pie a ton, a mile; and we have ample proof from the working of the river and canals in Rajahmundry, that for long distances, with steam-power at the extremely low cost of fuel in India, goods can be conveyed for less than 1 pie; this cost of fuel is a particular point. On the Godavery we pay 1 rupee a ton for wood, equal to 2½ rupees for coal, and I have every reason to believe, that when the river is regularly worked, it will be lower than this.

This is about one-fifth of the cost of fuel on the Ganges, where the actual cost of carriage up river by steam, according to such information as I have, is 4 pie a ton The charge is from two to three times this, but the profits are enormous, 50 per cent. and more. Every waterway in India will touch or approach some jungle, so that we may confidently reckon upon very cheap fuel; and this is particularly the case in the tract of country under review. I should think ½ rupee a ton for wood, equal to 1¼ rupees for coal, might be calculated upon. We may not be aware of the extreme cheapness of water-carriage when fuel can be obtained at such prices, till we make the calculations.

I am thus perfectly satisfied from actual results, that both in respect of passenger and goods traffic, these railways fail entirely to answer the purposes of the country, in respect of cost of transit.

There remains the question as to numbers and quantity to be carried.

I will not go so closely into this part of the subject as the last.

I have no doubt that a railway in India will be able to carry as great a traffic as offers, but this is only because its charges must be so high as to prevent 9-10ths or 19-20ths of the traffic there would be, if carried at such rates as are necessary, but it will thus effectually keep down the traffic; and the question, therefore, of whether it could carry such a traffic as there would be on many lines in India, is thus of small importance.

But on the line to the north-west, from Calcutta for instance, where the traffic is even now so enormous, and rapidly increasing, with very low rates, I should think we ought certainly to provide for 10,000 passengers a day, and 3,000,000 tons a year, and it is quite certain not even a double railway could carry that. No railway in England carries one-fourth of this, and some of them are most seriously crowded, and as in the case of the Great Northern, their expenses are so great in consequence of the speed they are obliged to push on the goods in order to escape from the passenger trains, the constant delays in sidings while other trains pass, &c, that there is an enormous loss on the goods traffic, as I have shown by the diminution of dividends.

I have no doubt that if Beitkul is made a port, and if the upper country is thoroughly opened up by a great extent of very cheap communication, that the main line will, in a very few years, have an immense traffic on it, and for this we must be prepared.

But it is a matter of very little importance that railways can neither carry at the rates nor the quantities that India requires, when we have a means in our reach, procurable at 1-5th or 1-10th of the cost of railways, that will in every respect most fully answer the purposes of the country as a communication, and especially when it will not only do so, but will at the same time enable us to attain to an object of still greater importance even than communications, viz. both as far as possible securing the produce, and greatly diminishing the cost of production

One of the principles on which I consider that the examination of the present question should be conducted is this, that in India, at present, communications are not the works of the first importance, but that works which will, as far as possible, secure the population from famine and scarcity, and afford the cheapest production, are the first, and that communications are certainly second to this. What satisfaction would there be in a railway passing through a population dying of famine, and in abject poverty, because their means of raising produce was so imperfect that almost the whole population was employed in raising food, as is the case at this moment in the Southern Mahratta country, as well as in almost all India. I am aware that railways were proposed as a means of preventing famines, and I allow that they would, in a manner, mitigate them; but I urge, first, that they would do it in a very small degree, because in famines in India the great mass of those who perish, do not die for want of food, but for want of money to buy it with: second, that when a population are suffering from famine, no communication can possibly rescue them; 10,000,000 of people would require 5,000 tons of food a day, costing, at such a time, probably seven lacs of rupees a day. What was the state of Ireland with its sea-board, providing the cheapest possible conveyance of food to within a moderate distance of every part of the interior? was famine prevented? how many hundreds of thousand perished even on the very coasts? and if the monsoon failed hundreds of thousands would perish in the Southern Mahratta country in spite of a railway that cost three millions. Further, the expense of carriage, as I have shown, is so great by a railway, that if the grain should be brought 300 or 400 miles, which it of course would, the cost of carriage alone would be at 8 pie a mile, 12 to 16 rupees a ton, or 60,000 to 80,000 rupees a day for 5,000 tons; and could a railway bring the quantity, and could all this money be found, still this would only bring it to the line of the rails, it would not distribute it throughout the tract, which would therefore remain to be done by other means So utterly ineffective would a line of railway be in every respect There is one more point to be considered with respect to this proposed line of railway. When it arrives at the top of the Western Ghauts, is it proposed to make a locomotive line down them, like the Bhore Ghaut? Though it would not be so expensive yet it would certainly be an enormous addition to the cost of the line, and would make the average cost very high.

What is first required is to make the country, as far as its circumstances admit of, independent of other countries for food, and then, to provide it with communications which shall both carry extremely cheaply, and also in some good measure pervade the tract A single line of communication through a country is not what is wanted, it is a net-work of them, a mile of cheap transit to every five or ten square miles of country.

I do not of course mean to say that we can absolutely secure the country from famine; if it pleases God to withhold rain for a certain time, all our works will be useless, but what I do say is, that beyond all comparison, our first work in India should be for the purpose of securing a supply of water to the land and happily in doing this, we cannot but at the same time gain our second grand point, the pervading the country with a net work of the cheapest possible lines of transit, capable also of carrying an almost unlimited quantity, and at ample speeds.

With respect to such works in this particular tract, I need not here go into detail, because I have already done so in the report I have forwarded on the Beitkul harbour

I will only here state the leading points The first is the remarkable fact that many hundreds of miles of the rivers here have so slight a fall that they are either now good navigation, or can be made so at a trifling cost The Mootah Moolah, Beemah and Kistnah, for instance, form one line, with a fall of 900 feet in 600 miles, to near Kurnool, being a fall of only 1½ foot per mile Wherever the fall is so slight as this, one of two things is the case either the fall is equally distributed, and then the navigation is already good, or there are parts where the fall is rapid, and then these can be corrected by annicuts and locks, at a moderate expense, and the principal part of the river must have a still less fall than that average For keeping up the navigation during the dry season on such small rivers as this, it can be done at a very moderate cost by storing water in tanks. Thus there can be no doubt that many hundred miles, probably not less than 2,000, of good river navigation can be obtained there for probably 1,000 or 2,000 rupees a mile, or 1-100th of the cost of a railway. The second point is, that though a great part of this tract is liable to very scanty supplies of rain (there was a partial famine there only four years ago, and one threatens now) yet the rivers are as well supplied as any in India, because the sources of the Kistnah, for a length of 400 miles, are in the Western Ghauts, and the whole country is thus traversed at every few miles by streams which I believe have never been known to fail. We have therefore as sure grounds as we could have for hoping that an effective system of canals for irrigation and navigation led from these rivers would be completely effective, and would really in every way fully answer the purpose for that tract, both securing cheap production and providing every talook with very cheap transit One grand line in the southern borders of this tract, viz., from the sources of the Toombuddra, past Bellary and Kurnool, and thence by Cuddapah and Nellore to Madras, has now been examined throughout, and it has been ascertained that it is a perfectly practicable line from the very summit of the Western Ghauts, for a line of river and canal navigation. This line would unite with the Beemah and Kistnah line near Kurnool.

For the connexion with Beitkul, I have ascertained that the Kala Nuddee is capable of being made effective to about 40 miles from the coast, and from the information I have received I have no doubt that a canal could be brought along the high country opposite to that point. I would then connect the two by a series of inclined planes, which might be done at a practicable expense

Now

Now surely it is a question whether under these circumstances it is best to spend three millions on 400 miles of railway here or on irrigating probably at least two millions of acres, yielding thereby an additional produce, at 15 rupees an acre only, of 300 lacs a year, and as far as possible providing for certain and cheap production, in addition to at least 3,000 miles of water communications to carry at ample speeds for all our purposes, and at one-fiftieth or one-tenth the cost of railway carriage. Or rather I should say, can there be the smallest room for question about it?

I must most earnestly urge a real consideration of these facts and arguments before so fatal a mistake is made as to enter upon this proposed work. It will not be the mere waste of three millions; it will be incomparably worse; it will in all probability seal up this beautiful tract of country for an unknown time from all the blessings of cheap production and cheap transit. For men once committed to these unhappy railways in India are under a sort of necessity to resist every attempt to give the country either of these two vital benefits.

I may just mention one most important point in this tract, viz., that it is perhaps of all India the best suited for European colonization. The situation of a great part of it so near the sea, and at the same time at an elevation of from 1,800 to 2,400 feet, makes it a delightful climate, and perfectly fit for European occupation. In this respect it is perhaps the most important tract in India, and worthy of the most particular attention from Indian statesmen.

I must again apologise for expressing myself so strongly and decidedly opposed to the views contained in these minutes; but I feel that it is a vital question to India, which requires the most explicit avowal of opinion by those who have had such opportunities as I have, however they may unhappily differ from those who, in office and everything else, are so much their superiors.

We are all agreed so far as that the grand object now is to bring to bear the energy, science and capital of the West upon the fertile soil and vast population of the East, as regards material things. The whole matter is resolved into the question, is the connecting link between these two to be iron or water? Which of these materials will most effectually accomplish our object?

Shall we make use of a material which we have on the spot in the utmost profusion, and which is procurable at an almost nominal cost, in comparison of its value, or shall we send to the other end of the world for one which is only procurable at a monstrous cost, and which, when brought, will not accomplish the real objects in view?

Supposing we bring a ton of iron into the interior for 150 rupees, we might for the same money apply to the land permanently at least 150,000 cubic yards of water a year, watering 30 acres, with an increase of produce of 450 rupees, and providing the cheapest transit besides. But the total cost of the iron, including the actual application of it to the work for which it is intended, is about 700 rupees a ton, viz., 110 tons of rails per mile costing 80,000 rupees, and for this 700,000 cubic yards of water may be brought to the land.

Spending our money on railways is, in fact, throwing away the greatest gift that God has bestowed upon India, and substituting for it that which can only be obtained at a cost entirely ruinous.

I am not surprised at these minutes. They only partake of the almost universal misapprehension under which not only Indian statesmen, from the late Governor General downwards, laboured, but even the mercantile community, who, it might be supposed, would have more readily perceived the necessity of cheap production and cheap transit.

There are happily strong indications that this misapprehension is now considerably weakened, and now that actual results of the railways can be referred to it seems to be a suitable time to make an effort to call attention to this great question, and to try to obtain for it a real investigation, of which there has not hitherto been a shadow. Everything, as in these minutes, has been taken for granted.

Among many such indications I may mention three which seem to me calculated to lead men to entertain the question whether they are right in thus taking for granted that railways are the remedy for India's material evils.

The first is, that when I had the honour of meeting the commercial community of Calcutta on the subject of the Rajmahal canal, rather to my surprise, I was not met by a single objection such as railway men usually make. I cannot but gather from this that the mercantile community generally have now great doubts about the railways answering the main purposes of the country.

Again, many of the witnesses before the late Colonization Committee strongly advocate irrigation and navigation. Mr. Balston, for instance, says, "A canal, even if it were to cost 50,000 *l.* a mile, would be much more profitable in India than a railway that cost 10,000 *l.*" He was a railway contractor.

Having thus called in commercial men, I trust I may be excused taking so great a liberty as to produce the testimony of a leading statesman also, viz., the Right Honourable the Secretary of State for India.

The following is a passage from a printed report of that nobleman's speech, at a meeting of the Manchester Cotton Supply Association, last year:

"It seemed to him one of the most practicable functions the association could perform to give information upon these points, and carefully avoiding being mixed up with Indian politics they should keep to the two great things, roads and irrigation. As to roads, he feared we were in danger of being misled by the precedent and example of England. It seemed to be thought that because costly lines of railway for high speed were suitable for this country (before a line was constructed we had a complete canal system, adequate to our heavy traffic), they were equally suitable for India. He believed and so did more competent judges, that that system of proceeding was a complete mistake. What was wanted in India was not costly lines for rapid travelling laid down in a few parts, but a comparative inexpensive though slow means of communication extending over the whole face of the country In that matter we should follow the precedent of the United States rather than of England. * * * It (the Association) aims at no victory but the victory of English knowledge, and energy and intelligence over apathy, and ignorance and sloth. We do not ask of the State to conquer fresh territories for us, we simply ask it to make use of those it already possesses. We do not desire the political subjection and humiliation of the native population of India; we do desire to compensate so far as is in our power the people of that country for the loss which we have caused of their political freedom, by enabling them to share in the material prosperity of the race that has conquered theirs"

I cannot but think that these indications of a different view being taken of the railway question from the almost universal one four years ago, are calculated to have a great effect in causing many others to pause before they proceed further in that direction.

I might add this Government's very decided testimony about hydraulic works, in their Despatch of the 15th May 1858, where among many other things they say: "Further the Government question whether, considering that the returns from irrigation works are always considerable and often immense, &c." Again, "The Government express their strong, unanimous and earnest advocacy, that all irrigation works, which on a comprehensive view of the wants of the country, may be deemed necessary to develope its undoubtedly great resources, be commenced at once, boldly and on a large scale, be pressed forward throughout all times and under all circumstances, and be looked on and practically treated, as in fact they are, the most economical because the most profitable in which the Government could possibly engage. It is needless now again to bring forward the innumerable instances in which money has in this Presidency been most advantageously invested in irrigation works. The proceedings of Government have only been too desultory and too-vacillating, and it is confidently asserted that India could be placed in a position to pay all her own expenses and gradually discharge the debt, far more readily and speedily by a judicious expenditure than by any scheme of retrenchment and reduction." For the information of those who are unacquainted with this Presidency it is necessary for me to mention, that this was written just after a most searching discussion of the effects of these works of irrigation and navigation, in which everything conceivable was brought forward to prove that they produced no results; and this therefore is in fact the deliberate decision of this Government upon that controversy.

What I must insist upon is that this is not a light question. It lies at the very foundation; it is really the fundamental point in the whole question of the management of India. Everything without exception of course depends upon this one, the supply of funds. The denudation of India as respects European troops, which invited and gave the temporary success to the mutiny, was solely owing to the want of funds, and to nothing else. And at this moment the most peremptory orders are received to put a stop to those things, which are absolutely essential to the well-being of India; for instance public works, education, &c, and so it must be till this only means of providing funds is resorted to

Tanjore, the most lightly assessed district in Madras, where the land is all saleable at a high price, yields 55 lacs a year, solely because its irrigation and communications have been attended to from its coming into our possession, while all other districts in India yield only from 7 to 30 lacs, and Rajahmundry by the same means has been raised in a few years so as to yield 40 per cent. more revenue than it did before, with at the same time a complete relief to the inhabitants.

The revenue this year will be about ten lacs above the former average, and the works are far from finished. The increase already obtained, not nearly half of the ultimate increase, if obtained from all the other districts of India, would add thirteen millions sterling to the revenue, and the means used there are of universal application. These works will probably cost half a million sterling; the thirty millions guaranteed for the railways would have improved in the same way 60 districts, yielding even at the rate only of the increase this year in Rajahmundry, six millions sterling. Expended as they are being, there is now a certainty that they will add not much less than a million a year to the burthen of India

The Madras Government alone has had decisive experience on this point, and their testimony is of the highest importance at this moment, and must have the greatest weight with that of Bombay.

Surely we have now had proof enough of the dreadful effects of this unhappy railway mistake. Take for instance the fruits that have been reaped from it in Bengal. Mr Bourne, though sent out by the railway company, saw at once that water, not iron, was India's remedy. That to neglect its magnificent rivers, and send millions to England for iron, was a "complete mistake." He therefore proposed to put powerful steam trains on the rivers. This was referred to the late Governor General, and under the influence of that fatal ignorance of the fundamental principles of the science of transit which was so general, it was rejected by him. Instead of it, 150 lacs were spent on the Raneegunge railway. When the revolt came to try these two schemes, what was the result? Did the railway prevent the Cawnpore and numberless other massacres; did it reinforce our garrisons, pick up our hunted women and children on the banks of the rivers, &c.? The whole revolt went on just the same as if this 150 lacs had never been spent

Now had a small part of this money been spent on a large flotilla of river steamers, and even a small portion of the remainder in improving the rivers, 2,000 miles of river might have been covered by these most powerful protectors; garrisons might have been rescued or strengthened, the refugees might everywhere have been picked up, the Cawnpore and many other massacres could not have taken place, small detachments might have been landed in an unexpected moment in the very heart of the enemies' haunts, quite fresh, and taken on board again at any moment; every steamer would have been a moveable and at the same time an impregnable fortress, and the whole character of the contest would have been totally altered. Millions of money, and how many lives of men, women and children, would have been saved

After these terrible sufferings, from the most grievous neglect of incomparably the most powerful instrument in the hands of our Government, surely we may at least make this use of them, to consider the mistakes we have made and let it warn us to consider a little before we commence upon another great expenditure upon similar works

Nothing can be more probable than that if this scheme is undertaken, when a similar sum of 150 lacs has been spent upon it, a famine may take place and hundreds of thousands perish, without the slightest relief from that expenditure, while the same sum spent on hydraulic works would probably entirely prevent a famine.

I would venture to suggest that committees composed of one engineer and one mercantile man should be appointed at each of the Presidencies to investigate this important point, at what cost such railways as these will be able to carry goods in India. I think it essential that a non-professional man, but a good man of business, should help in this inquiry. These three reports might then be remarked upon by the chief engineers of the railways, and the whole of the papers published It seems to me that there are now tolerable data for examining this point, and that it is of very great importance that something like a definite conclusion should be arrived at about it, if possible. At present all these schemes seem to be decided upon an "if," of the value of which "if" there is no knowledge whatever Of course the important items of depreciation and repairs must be estimated for in making this calculation.

There are in this paper many things repeated which I have said in former ones, but it is necessary to make the paper in a sense complete in itself, as it may come into the hands of those who have not seen the others.

To show the effect of irrigation and navigation, I append to this paper a statistical statement of the Rajahmundry district, showing its progress in revenue, exports, internal traffic, &c , since the commencement of the works there Certainly no other district in India ever made such progress in the same time.

APPENDIX.

Commissioner's Office, Burdwan Division,
Hoogly, 14 April 1858

No

To the SECRETARY to the BOARD of REVENUE, Lower Provinces
Fort William

Sir

Report on the effects of the Railway or other means of conveyance.

IN reply to your letter of the 8th January last, No. 6, I beg to submit the following "remarks on the effect of the railway or other means of conveyance in the districts through which it passes," and I greatly regret that the utter absence of any legal power to call for such statistical information, as may be easily obtained in more civilised countries, renders me unable to submit a complete report.

Line of rail.

The railway, commencing from Howrah, runs first through five miles of that district, then through about 45 miles of Hoogly, and finally through 71 of Burdwan, altogether 121 miles to Raneegunge, close to which terminus are the great collieries of Bengal

Decrease of coal boats on the River Damoodah

3 The number of coal-boats employed by the Bengal and other coal companies in 1844 was 2,252, which could be used only during the height of the rains, when the Damoodah river was full That number has been now reduced (by about 30 per cent) to 1,594, and the quantity of coal conveyed by their means from 23,36,582 to 16,22,363 maunds, or from 77,886 to 54,312 tons. But the railway alone in 1857 carried 90,754 tons; far more than the larger number of boats used to transport

4 I have recently been informed that the very high price of provisions has led the boatmen to make an attempt to raise their demands for the conveyance of coals, which has hitherto been (3) three annas per maund, while the railway charge has been reduced from 3½ annas to 2 annas 10 pie per maund. This will of course yet further decrease the quantity of river-borne coal, unless the river freight charge be speedily and considerably reduced

5. At Howrah, some rich chowdhries, each of whom could command several hundred carts, almost monopolised the Calcutta trade with the Upper Provinces, as to transport by land. The marginal statement shows what a remarkable effect the railway has had in diminishing the demands at Howrah for carts, reducing it in three years to less than one-third of what it was the year before the railway was opened.

Year	Number of Carts.	Decrease	Goods conveyed (Maunds)	Decrease	Remarks
1854 -	3,847	- -	76,943	—	—
1855 -	3,341	406	68,820	8,120	—
1856 -	2,725	716	54,500	14,320	—
1857 -	1,208	1,517	24,160	30,340	—

6. On the other hand, the number of carts starting from Burdwan, to which place merchandise is brought by rail from Calcutta, is greatly and daily increasing. During last month I had them counted for several nights, in one halting place only, and found the number to be from 163 to 185 each night. The Burdwan carters refuse to go down to Howrah for the goods, and at Raneegunge terminus no carts are to be had. Thus the strange practice of taking their goods off the railway at its centrical station, has, in many cases, been forced upon the merchants.

Salt.

7. It is remarkable that, during 1857, no less than 220,000 maunds about (70,000) tons of salt have been carried by rail from Howrah, and I regret that I cannot ascertain its destination, as it could hardly have been consumed in the chowkees on the line of rail, and I fancy it still goes up the country in boats

8. On and within easy reach of the line of rail, the goods traffic has increased greatly. Before the close of the first year of the railway working (1855), I myself have seen 1,000 bags of rice started from the Burdwan station in a day, whereas before the opening of the rail, I believe 1,000 never left Burdwan in a month.

9. The

Steady and large increase of traffic both of goods and passengers.

9 The annexed statement showing the goods and passenger traffic of five half-years is most remarkable. The second-class passengers were more numerous in the first half-year than they have ever been since, though the number is steadily increasing again, and the coal carried on the fifth was a trifle less than that in the fourth half-year, but still nearly double of the quantity carried in the corresponding half of the preceding year. With these two exceptions, every entry shows a great and steady increase, and the shareholders must look with no small gratification to the fact that the outlay has not, in any one period, amounted to a half of the incomings.

Very low fare for third-class passengers, and its effects.

10. The enormous number of third-class passengers proves the wisdom of the resolve to reduce their rate of fare to the lowest possible limit. Our English Parliamentary rate is a penny a mile, while here a poor man is conveyed 121 miles for 45 pence, or nearly three miles for one penny.

Mania for railway travelling amongst the poorest class.

11. I was surprised to hear a few weeks ago, from a most intelligent native gentleman, that the railway has done great harm to the poor people in its neighbourhood! On asking for an explanation of his meaning, I was told that the mania for travelling by railway has become such, that thousands of poor people deny themselves common necessaries, and pawn their petty jewels, or pots and pans, for the pleasure of being able to say that they, whose ancestors never knew any conveyance but their own legs or a bullock cart, and that within a circle of half a dozen miles round their homes, have visited Calcutta in a fire-ship, as the train is still very commonly called.

Epitome.

12. Again expressing my regret for the scantiness of my information, I must sum up my report thus:

First. Part of district not affected.

13 There are parts of the three districts above named, such as the southern portion of Howrah, between the Hooghly and Roop Narayan rivers, and the north-eastern portions of Burdwan on the Hooghly, which are so well provided with water carriage, and so far from the rail; and other parts of all three districts in which the want of roads makes approach to the rail so difficult, that they have been little, if, at all, affected by the rail.

Second Part affected

14. There are parts of all three districts so favourably situated, close to, or easily accessible by road from the rail, that they have been greatly affected as to goods; but perhaps, most of all as to third-class passengers' traffic.

Railway rates for goods should be reduced.

15. The transport of goods by carts, and yet more of goods and of passengers by water, along the first 30 miles of rail (Howrah to Mugrah) is so very cheap, the trouble and expense of shifting goods from the rail to carts, and *vice versâ*, tells so seriously in short distances, and the natives are yet so incapable of appreciating our English idea, that "time is money," that the railway has not affected other means of conveyance hitherto, nor drawn goods traffic to itself so exclusively as it doubtless would have done but for the aforesaid previously existing cheap means of transit, and as it will do where those means do not exist; and when the Company may be prevailed upon, as I hope they soon will be, to adopt the same enlightened policy, with regard to their rates of carrying goods, as they have done with regard to the third-class passengers.

Trouble and cost of hifting goods from arts to rail, and *ice versâ*, tell eavily on short istances

16 I have above stated that the low rates of conveyance by carts and boats have prevented so much use of the railway for goods traffic as might have been expected had those means been less cheap and accessible, or had the rail distances been greater and the charge for transit lower. It is also evident that on any short line, the trouble and expense of carting goods from a warehouse in Calcutta to the river side, of there unloading them, crossing them over the river, again moving them on cart or coolies to the Howrah goods station, forwarding them, say three miles by rail, and lastly conveying them four or five miles on a cart to their destination, will not be undertaken by any one who can load them on a cart at his own office door, cross them on that cart over the ferry, and deliver them to the consignee without one charge of conveyance, at less cost, and in not much more time perhaps, indeed, in less time, for a cargo may be delayed 12 or 24 hours, or even more, at the railway station.

Difficulty of turning arts at Rannee-unge

17. But another cause seriously affects the rail at present. Those merchants who might avail themselves of it to send their goods for 121 miles, *en route* to stations 500 or 900 miles distant, do so at present to an extent scarcely noticeable, I believe because at Ranneegunge it is next to impossible for them to procure carts. There has been during the last year a pressure on carriage for military purposes, which may now be disappearing; but the country around Ranneegunge yields nothing but the miserable cart called a suggar (a very small cart with wheels formed of a circular plank), and it is far better to engage carts in Calcutta for the whole journey, or even in Burdwan, as shown in para. 5, than to use the rail for a small portion of it, and then to fall into difficulty from a want of carts at Ranneegunge.

ourth. Far eater success may expected.

18. I feel confident that even the great past success of the railway will be eclipsed when it shall have been extended so far as to reach the great marts of the North Western Provinces and to absorb the vast traffic still carried on by carts along the grand trunk road, and by boats on the river, which it cannot yet be said to have touched.

fth The import-ce of road.

19. I have from my youth up strenuously advocated road-making, and I think the importance of multiplying roads as feeders to the railway, and as promoting generally the political and social advancement of the people, cannot be too much impressed on the Government and the community.

I have, &c.
(signed) *W. Elliott,*
Commissioner.

MEMORANDUM on Mr. *Elliot's* Letter on the effect of the Railway or other means of Conveyance.

Para. 3. Coal traffic. The distance from Raneegunge by rail is 120 miles, by the Damoodah and Hooghly, 160.

The water charge of three annas per maund is equal to 6¼ pies (¾*d*) per ton per mile; that by rail was 3½ annas, or about 10 pies (1¼*d*), the reduced rate, 2 annas 10 pies, is 8 pies (1*d*.) per ton, and Mr. Elliot states that the charge of 6¼ pies by water has become insufficient in consequence of the altered value of money of late. The quantity carried by water was 78,000 tons; it is now 54,000; by rail it is now 90,000 tons. The cost of carriage per ton for the whole distance was therefore 6 rupees a ton by rail, and is now 4¾ rupees, and by water about 5¾ rupees.

REMARKS—1st The water charge is increased by the short portion of the year that it is opened, by the increased distance, 40 miles, or one-third more than the railway, but doubtless most by the boats having to go down to the broad part of the Hooghly, which prevents their being loaded as they could be in smooth water, and causes great risk. This charge of 6¼ pies per ton per mile is enormously high for water carriage; in a thoroughly good water line it should certainly be under one pie, with such a length of carriage, that is, if the Damoodah were kept open nearly or quite the whole year, and connected with the Hooghly at Calcutta by a canal, making the line direct, the charge per ton of coal should certainly not exceed 10 annas, unless the present low value of money continues, when it might be one rupee. Taking the present quantity at 1,44,000 tons, the community are put to a needless expense of 5½ lacs of rupees per annum, and the consumption of coal will of course continue to increase, this is the difference between 4¾ rupees and 10 annas. It is certain that a very moderate expenditure, perhaps 2,000 rupees a mile on the water line, or 2½ lacs would make it a good navigation direct to Calcutta, just $\frac{1}{80}$th part of the cost of the railway. In Rajahmundry the cost of carriage per mile in the canals is about one pie for short distances.

2. There cannot be a greater mistake than thus to expend an enormous sum in improving land transit, by which, after all, the cost of carriage must be ruinous while the water carriage is left in such a state from want of a mere trifle of expenditure, and when by no other means can the great traffic be carried cheaply.

Para. 5. The road traffic is so insignificant, that it is matter of little consequence how those goods are carried. It was under 3,000 tons a year, and is now under 1,000.

Para. 7. The statement of salt, 70,000 tons, does not seem to agree with the total quantity of goods mentioned in the Table as being only 49,000 tons for the same year. This requires explanation.

Para. 8. Increase of Goods Traffic. The whole of it is a small amount, the total number of tons is stated at 49,000 tons; but it is not stated what is the average distance it is carried, probably not 50 miles, in which case the average quantity carried along the whole length of rail does not exceed 20,000 tons, quite an insignificant quantity in such a locality, about $\frac{1}{100}$th part of the river traffic, and one-seventh of the traffic last year on one of the Rajahmundry canals, which only connects towns of 15,000 to 17,000 inhabitants.

Para. 9. Passenger Traffic. The total number of passengers for the year is above a million. The sum paid by each second class passenger is one rupee three annas, and by each of the third class half a rupee, showing that the average distance travelled is about 30 miles, or one-fourth of the whole length; so that the average number of passengers on the whole line is one-fourth of the total number, or 250,000 per annum, equal to 800 a day. To judge of this we must, as in other points, compare it with known passenger traffic by other means. On the southern road out of Madras, at 11 miles from the fort, the numbers were found to be 3,000 a day; on a high road in Tanjore, far from a city, 1,200 men, on a bridge, four miles from Trichinopoly, a city of 100,000 inhabitants, 20,000 a day; by the transit boat on the Rajahmundry canal to

Cocanada, 100 per day, a canal leading to a town of 17,000 inhabitants. The number corresponding to this for Calcutta, allowing 600,000 inhabitants, should be 3,500 a day It is evident from these that the railway only receives a small portion of the travellers, just as it is in the Madras Railway, which does not convey $\frac{1}{30}$th of the travellers on that line. Thus it is certain that even as respects passengers, these expensive works do not suit the country. The charge of 3 pie, or $\frac{1}{4}$ anna, or $\frac{3}{8}$*d*, for the lowest class, completely shuts out $\frac{9}{10}$ths of those who require conveyance On the Rajahmundry canals the charge is one pie, and the manager states that even that charge is sufficient to keep away by far the greater part of the travellers. These boats are now yielding 25 per cent., and it is under consideration to reduce the rates to three-fourth pie as likely to be more profitable. The profits were increased much since they were reduced from two to one pie Were these boats worked with steam instead of men, they would afford to carry very well at half a pie per mile; and no higher rate than that would bring the principal part of the travellers.

Of course, just at the entrance of a large and wealthy city like Calcutta, there is a large number who can afford to go backwards and forwards frequently a very few miles, but the numbers diminish rapidly as the distance increases. Probably, the average number on this railway being 800 per day, the numbers at each end are something like 1,400 at the Calcutta end, and 200 at the other.

But the most important point to be observed on this subject is, that the total receipts are 7½ lacs for a half year, out of which the first class passengers pay 25,000, or $\frac{1}{30}$th part; showing that those for whom this enormous expense is incurred, in order to provide them with high speed, are so far from paying their share of the expenses, that the profits from them, if any, are hardly perceptible. There cannot possibly be any mistake in concluding from this, that high speed is not what the country wants; the fact is, that the poor are paying for the rapid conveyance of a very few rich, they also travel quick themselves, but most assuredly they would much rather travel slower and pay less, but they have no option.

What the average passenger traffic will be as the railway extends further we have no data to judge, excepting that we know that in England, with all its wealth, there are few travellers of long distances, the average for all England being only 13 miles for each traveller.

Probably, as the railway extends, it will carry at these prices few besides that class who, in this Return, appear as first and second class passengers, excepting for a few miles out of the great cities. The proportion of people who can afford to pay eight rupees for a journey of 500 miles will be very small.

Para. 10. The charge of three-eighth of a penny here is far higher than one in England; even near Calcutta the proportional value of money is probably four to one, and in the interior it is at least six to one, compared with England. The price corresponding to that in England should not be more than three-quarters pie, merely allowing for difference in value of money; but the proportion of people at all well off in India is far less than in England.

Para 13. The greater part of the country will be totally unaffected by the railway. It is the greatest delusion to call making a single line of railway through a vast breadth of country "opening the country." Not a fiftieth part of the country is benefited by it. To open the country there must be a close network of communications. Tanjore with its 1,000 miles of just practicable roads on an area of 3,000 square miles, is incomparably more benefited than Burdwan with its 71 miles of grand railway, and the Deltas of the Godavery and Kistnah, with their 2,000 miles of water communication at half to one pie per head or per ton a mile, are really opened up. The southern part of Burdwan, and the other districts with their wretchedly imperfect neglected water lines are immensely better off than the northern part with its one line of rail—and the cost of one or two miles of railway expended in improving the water lines would have had 100 times more effect than the whole line of railway. A comparatively most trifling sum would have given a first class steam boat communication at 15 or 20 miles an hour to Raneegunge, and at rates both for goods and passengers one-fourth of those paid on the railway, and ten times the number of people would have made use of it. The vast natural advantages of this country are thus thrown away, because in England they had not what we have. The 150 lacs that have been spent on one single line of 120 miles worked at 10 pice a ton, and three pice a head would have completely pervaded almost all Bengal with a network of first-class water-carriage to be worked at 15 miles an hour or more if wanted, and at from half to one pie per ton and per head Probably 5,000 miles of such communication would have been obtained, besides that in doing it, an immense area would have been secured as far as possible from both drought and flood.

It is indeed most grievous to see so monstrous a perversion of means, entirely through a want of consideration of the circumstances of the country. If we saw the Egyptians busily employed in carrying the earth from the Delta to make land on the sands of the desert, because they had heard that in some barren country the poor people were compelled to fetch earth from a distance we should clearly comprehend their mistake, but this is exactly what we are doing. People suppose that because they have spent a great deal of money, they have necessarily accomplished a great object, but the amount of money expended may be simply the measure of the magnitude of the mistake they have made

It is certainly no exaggeration to say that 5,000 miles of water communication carrying at rates that the poorest travellers, and the poorest goods could bear, would have conferred 1,000 times more benefit on the country than 120 miles of railway, carrying at prices only a hair's breadth below the old rates, for instance, 2 As. 10 h. for coals against 3 As. by the boats Even were the whole traffic transferred to the railway it would be no proof of great benefit, if the *diminution of charge is insignificant, the benefits are insignificant* With respect to coals also, the railway has after all to discharge them into boats to be conveyed to the other side of the Hooghly, and the various points where they are wanted.

Para. 15. The natives are at least as capable of appreciating "our English idea that 'time is money' as we are;" but they are too quick to think it is, when it is not The Manchester people send $\frac{11}{12}$ths of their valuable manufactured goods at two miles an hour to Liverpool, by the canal with a railway running close to it, because they know that even in such goods 15 hours of time is not money; and the natives know well that a week in the conveyance of grain worth 3 lb. a ton, is not money, at least it is only 1 A or one-eighth pie per ton per mile if it is carried 100 miles, allowing interest at 10 per cent., so that a difference of one pie per mile in cost of carriage, would be eight times the loss in interest if a week of time were saved. The Americans are in this respect on a par with the Indians. While the Hudson and Lake Erie canal is closed by frost for five months together, 10,000 tons a month are carried by the railway, and as soon as the canal is opened again 300,000 tons a month are conveyed along it, so that there it is thought that *five* months of time is *not money*, for $\frac{29}{30}$ths of the traffic is stopped in the winter, although it is at that time that all the common roads leading to the railway are in the finest working order.

With respect to the enlightened policy "of carrying cheap," the question is at how low rate the railways can carry. It is most certain that the bare expense of carrying by rail, where high speed trains run, is eight or 10 times that by good water lines.*

Para 16 Almost all the causes mentioned in this para accounting for the small traffic by the railway, which would be greatly increased, if they were removed, are the irremediable objections to such a mode of conveyance inherent in the country. If goods could not be carried cheaper by water even with human power, than by land with steam power; if there were no water carriage, if Calcutta and Howrah and all the great towns and cities were not at the water's edge; if the nature of the country did not offer the greatest facilities for improving and extending water carriage, if the same circumstances did not offer essential obstacles to railway, (as for instance, neither goods nor passengers being able to enter Calcutta at all by this railway, &c. &c.,) if all these "ifs" were away, it might have been wise, under such unhappy circumstances, to spend 1¼ lacs on a mile of railway, but these "ifs" are unrealities and impossibilities, and the question with wise men always is, not "what should we do, if, &c.," but *rebus sic stantibus*, what is best to be done?

---

* On the Madras line, the Consulting Engineer showed that there had been positive loss on the carriage of goods at 10 pie a ton, on the last half year of 1857.

Para. 18 "When the railway absorbs the vast traffic carried on by carts along the grand trunk road and by boats on the river." With respect to the former, it is stated, para. 6, to be from 165 to 185 carts per night, supposing 100 of them loaded with half a ton each, it would give 18,000 tons a year, a small item for a railway. The water traffic is carried at about one-fourth of the charge on the railway, how much of that will be transferred, anybody can judge, even supposing the unaccountable neglect of water carriage is continued, but it cannot be imagined, that under the new regime at least the immeasurable natural advantages of the country will continue to be entirely thrown away, as they have been under the old one. A mere trifle expended on even the present water lines, will reduce the cost of carriage to half of what it now is, and a thorough system of water communications would reduce it to one-fourth of what it now is, or to $\frac{1}{16}$th of the railway charge.

Para. 19 "Common roads." All that is here said in the comparison of water and rail, is also in a measure true of water and road. The natural circumstances which are all in favour of water are against the roads. In Rajahmundry and Guntoor, if 80 lacs are ultimately spent, and 2,000 miles of navigable canal are obtained, the canals will have cost only 4,000 rupees a mile, supposing that the whole were charged to navigation, but at least three-fourths should be charged to irrigation, leaving only 1,000 rupees a mile of communication at half or one pie a ton a mile. Whether in a similar country it is preferable to spend 1,20,000 rupees a mile on roads, to carry at two or three annas a ton, can easily be decided.

It is nothing less than a vital question to India, what kind of communications are suitable to it. If a first-class passenger could step into a steamer on the Calcutta side of the Hooghly and go direct to Raneegunge at 15 or 20 miles an hour, he would accomplish his journey at one-third the cost, far more comfortably and conveniently, and as quickly as by rail, while the capital expended in completing a first-class steam-boat communication would have been so ridiculously small compared with that which has been spent on the railway, that the shareholders might be receiving 50 or 100 per cent, and instead of 800 passengers a day, 8,000 would probably have had the benefit of conveyance. In no one single respect has even a first-class passenger an advantage in travelling by the rail, that he would not have in going by water, while all parties concerned, the travellers, and especially the poor ones, the producers, and consumers of goods, the shareholders, the Government, the whole community, would have had enormous advantages which the present line does not afford. What has been gained? the grand sight of a locomotive with its train of carriages But was the object of this expenditure to produce something to look at? The object was to carry goods and passengers, 1st. cheaply, 2d. at a suitable speed, not to have something grand to look at. Where the latter is the object, let the money be expended accordingly. But don't let us leave Calcutta with the object of going to Delhi, and travel on without observing in what direction we are going till we arrive at Madras

It makes no differencee to either the merchant, or the tea drinker, or the sugar grower, whether the sugar was carried in a grand procession, or in a poor looking canal boat, but it does concern them all whether it was carried cheaply or dearly.

And what is the difference to the poor, $\frac{99}{100}$ths of the community. Suppose that in Rajahmundry, instead of protecting a million of people from losing their lives and their property by floods or by drought, irrigating 12,00,000 acres, conveying fresh water and cheap transit, throughout the year to every village, at a cost of 50 lacs, suppose instead of this, 50 miles of railway had been made, conveying two or three first class passengers luxuriously, but leaving almost the whole population in every respect just where it was, liable to death by famine or flood, without communications, and in some places miles from drinking water in the hot weather. Would it have been a wise proceeding? What is applicable to one district is equally appplicable to all India. How awful it would be if we were to see 100,000 people in Burdwan die of famine next year, with its grand railway passing through it. It might help to bring grain to a small portion of the district, but it could not make the people able to purchase it In general, the people of India do not die of famine for want of grain, but for want of money to purchase it How poor a compensation it would be that the dying people saw daily a grand sight in the railway train, and knew that half a dozen gentlemen were travelling at a high speed In Madras the number of first class passengers on the first 80 miles out of the capital is three a day, and on this line it is on an average 15 a day on the first 120 miles out of such a city as Calcutta.

With respect to the profits to the shareholders, the present statement does not show what they are. The balance, after deducting the stated expenses, is 7,000 rupees a mile, or 6 per cent on 1¼ lac But nothing is allowed for the two great items of repairs and depreciation All the works being comparatively new, the present cost of the former is of course trifling, and nothing is allowed for the latter. I suppose these two items would considerably reduce the apparent profit.* As the railway extends, the traffic on the present part will of course increase, but it by no means follows that the average of the whole will be greater than the average of the first 120 miles out of Calcutta, for the number of passengers going to and returning from the capital a few miles is enormous, compared with what it will be at a distance from any great city

But we have now abundant data for this conclusion, that the returns, whether direct to the shareholders, or indirect to the community, will be utterly insignificant from a lac of rupees expended on a mile of railway, compared with that from the same sum expended on 25 miles of irrigating and navigable canal And it is equally certain that the amount of these returns direct and indirect, is the true measure of the value of any works for the material improvement of the country. "But why not do both?" Surely reason requires that we should rather ask, "why should we do both?" If we know how to spend any amount of money, so as to yield directly and indirectly 200 per cent, "why should we" waste any part of it on schemes which would not yield 20

If a merchant discover a way of employing his capital so as to return 20 per cent does he say, "why should I not" employ part of it in another scheme which he knows will only yield 2 per cent.

2dly. But the case of the railways is far worse than this, because it keeps all parties under the delusion that they are "opening India," and this prevents them from doing anything else. But for this unhappy delusion, something would certainly have been done during the last 10 years towards "opening India" For instance, most assuredly we should have had large steam flotillas on the rivers, which would have prevented $\frac{99}{100}$ths of the horrors and consequences of the late revolt

Undoubtedly so far as the material welfare of India is concerned, no question can compare with this in importance, what is to be done in future? will the home authorities continue to guarantee interest on any number of millions to be employed in making railways, while they continue to refuse the same to capital employed in navigation and irrigation?

The question is now before the home authorities in several ways, and they have so far given way as to grant an annual sum for the navigation of the Indus, which was refused by them on the decision of the late Governor General 10 years ago. The question indeed is now becoming so urgent that it will no longer be possible to defer a decision upon it.

A new case has now arisen. Which should be done; should a million be expended on a hundred miles of railway in the direction of Midnapoor, or should the same sum be expended on a canal from Calcutta by Midnapore to Cuttack and the Chilka, with the irrigation of 2¼ millions of acres lying between that line and the sea; rescuing the magnificent Deltas of the Mahanuddee, Brahminy, &c, with their two millions of inhabitants from their present shameful state of exposure to drought and flood, and giving them 2,500 miles of water transit?

---

* On the whole of the Railways in the State of Massachusetts in America, the repairs of roadway alone is in a series of years 2¼ per cent., to which must be added that of keeping up the rolling stock.

Upon the Delta of the Godavery 30 lacs have been expended, the revenue this year is about 10 lacs above the average of years before the works, and more than 60 lacs of excess of revenue have been received since the works were begun, or 30 more than the whole sum expended; and only about one-fifth of the land watered yet pays any water rate, and the benefits to the people are of the value of a far larger sum. Compare this with the results of the railways. What is the next excess of actual receipts over expenditure in their case? While 1½ millions have been expended on the part of the Calcutta line finished have three millions been received? The statement shows a total excess of receipts over current expenditure of 16 lacs up to the end of 1857, or $\frac{1}{20}$th part of that sum, and certainly the proportion of benefits to the community are in a still smaller proportion. On the Madras line the results are far worse, and on the Bombay certainly not better than in this. And in all these cases, it is the first piece out of a capital city on which all the traffic of various main lines of country is concentrated What will be the result in some of the distant and thinly populated parts of the country? Most certainly they won't pay the expenses of stations.

It is surely high time fairly to consider this vital question. It cannot possibly be deferred much longer.

(signed) *A. Cotton*, Colonel,
Commandant of Engineers

EAST INDIAN RAILWAY.

STATEMENT OF TRAFFIC.

PERIOD	Number of Passengers.			Tons of Goods	
	1st Class	2d Class.	3d Class.	Coal	Sundries
Second Half 1855 - - - - - -	4,966	26,564	3,14,137	13,217	4,833
First Half 1856 - - - - - - -	6,379	23,137,	4,00,123	19,443	13,811
Second Half 1856 - - - - - -	6,562	25,702	4,30,162	23 864	20,897
First Half 1857 - - - - - - -	6,906	26,181	5,32,024	46,462	22,142
Second Half 1857 - - - - - -	7,026	26,389	4,89,171	44,292	27,083

PERIOD	Receipts of Passengers				Receipts of Coals and Goods.	Total Receipts.	Gross Expenditure.
	1st Class	2d Class.	3d Class	Sundries.			
Second Half 1855 - -	17,440 15 –	34,705 6 3	1,59,751 10 9	24,099 11 10	1,27,940 6 –½	3,63,938 1 10½	1,61,404 13 6
First Half 1856 - -	28,886 2 –	29,463 12 2	1,98,243 8 6	31,783 11 7	2,19,543 15 6	5,07,921 1 9	2,06,951 10 10¾
Second Half 1856 - -	26,439 14 –	32,678 6 10	2,07,744 3 10	23,362 7 7	2,40,376 8 5	5,30,601 8 8	2,18,944 2 5
First Half 1857 - -	29,089 6 9	34,874 – –	2,43,597 9 7	49,824 7 8	3,41,024 7 7	6,98,410 13 2	2,63,241 4 2
Second Half 1857 - -	25,516 1 –	32,626 2 8	2,29,762 15 2	93,444 2 6	3,61,717 – 4	7,53,066 5 8	3,27,515 9 1

E. and O E

Hooghly 15 April 1858.

(signed) *Fred. Cox*,
Traffic Manager.

(True Copy)
(signed) Edward Palmer,
Agent.

(signed) *W. Elliot*,
Commissioner of the Burdwan Division.

COMPARISON of a RAILWAY from *Calcutta* to *Raneegunge* with Water Communication in the same Line.

	Railway.	Water Communication
Length	120 Miles	120 Miles
Cost per mile	1,20,000 Rupees.	—
Cost improving Damoodah		2,000 Rupees.
Cost complete Canal		10,000 Rupees.
Total Cost	150 Lacs.	—
Cost improving Damoodah		2 ½ Lacs
Cost complete Canal		12 „
Charge for interest at 5 per cent.	7½ Lacs	—
Charge in Damoodah improved		12,500 Rupees
Charge in complete Canal		80,000 Rupees
Speed —1st Class Passengers	17 Miles	15 Miles
2d „ „	17 „	12 „
3d „ „	17 „	8 „
Goods		15 to 3 Miles
Coals		6 „ „
Train —1st Class	7	8 „ „
2d „	7	10 „ „
3d „	7	15 „ „
Goods		8 to 40 „
Coals		20 „ „
Charge.—1st Class	18 p.	6 p
2d „	9	3 „
3d „	3	¾ „
Goods	8	1 ½ „
Coals	8	1 ½ „
Total Charge for 120 miles		
1st Class	11 ¼	3 ¾ Rupees
2d „	5 ½ Rupees	1 ¼ „
3d „	2 „	– ½ „
Goods	5 „	1 „
Coals	5 „	1 „
Nos. of 1st Class Passengers	15 per day	150
2d „ „	40	500
3d „ „	740	7,000
Tons of Goods	20,000 per	200,000
Coals	90,000	300,000
Profits deducting 2 per cent. from the stated profit on the Railway for repairs and depreciation.	4 per cent.	40 per cent
Saving to the Community on present traffic only.		
Passengers.—1st Class		85,000 Rupees
2d „		50,000 „
3d „		4 Lacs.
Goods		2 „
Coals		3 ½ „
Number of places for receiving and discharging	20	Every point.
Terminus	One on the Howrah side	Every point on the Hooghly, the Canals, &c.

The estimated cost of construction and of working the water-line is taken from the known cost of canals in similar situations, and the estimate of numbers of passengers and tons, is made from the reduction of charge. The cost of the Banka Canal was 1,500 rupees per mile; the sum here allowed is 10,000 rupees The tons of goods passing down the Rajahmundry canal to a town of 17,000 inhabitants is 1,50,000, and it increased by 60,000 tons last year, the quantity here estimated to a city of 6,00,000 inhabitants is only 200,000 tons.

(signed) *A. Cotton*, Colonel,
Commandant of Engineers.

STATEMENT of REVENUE, EXPORTS, &c of the Districts of Rajahmundry, from Ten Years before the New Works

Years	Total Revenue of District		Price of Rice per Ton	Bullion Re-circulated from Treasury.		Balance of Bullion.			Imports by Sea.		
						Against District		In Favour of District			
	Annual 1	Averages 2.	3	Annual 4	Averages 5	Annual. 6	Averages 7	8	Grain only 9	Average 10.	Total Imports. 11
	£	£	£ s	£	£	£	£	£.	£.	£.	£
1836–37	216,000	196,000	4 1	124,000	(c) 98,000	92,000	(d) 98,000	- -	- -	- -	- -
1837–38	214,000		4 9	111,000		103,000					
(a) 1838–39	173,000		6 19	78,000		95,000					
1839-40	174,000		5 10	74,000		100,000					
1840-41	174,000		5 2	74,000		100,000					
1841–42	210,000		3 3	18,000		121,000					
1842-43	196,000		2 17	95,000		101,000					
1843–44	173,000		2 13	106,000		67,000					
1844-45	233,000		2 18	127,000		106,000	- -	- -	19,000	(f) 22,000	23,000
(b) 1845-46	200,000		4 5	106,000		94,000	- -	- -	25,000		39,000
1846–47	242,000	237,000	4 5	154,000	150,000	89,000	87,000	- -	19,000	23,000	41,000
1847–48	250,000		3 19	159,000		91,000			34,000		64,000
1848–49	233,000		3 11	132,000		101,000			23,000		44,000
1849–50	224,000		3 7	157,000		67,000			17 000		33,000
1850–51	242,000	245,000	3 3	148,000	197,000	94 000	48,000	- -	12,000	7,000	30,000
1851-52	245,000		2 18	159,000		86,000			9,000		35,000
1852–53	250,000		2 17	233,000		17,000			3,000		23,000
1853–54	244,000		5 11	247,000	- -	- -	- -	3,000	4,000		26,000
1854–55	251,000	- -	4 15	250,000	- -	1,000	- -	- -	8,300	(e) 6,000	45,000
1855–56	259,000	- -	4 12	266,000	- -	7,000	- -	- -	1,700		57,000
1856–57	268,000	- -	4 8	236,000	- -	32,000	- -	- -	10,000		75,000
1857–58	2,750,000	- (n) -	4 7	- -	- -	- -	- -	- -	- -	- -	51,000
									First Five Months of 1858–59		-

(a) Some trifling repairs began this year

(b) The great works began this year

(c) These sums show the amount of bullion paid out of the treasury within the district on account of—1st, Government establishments, 2d Public works, 3d. Private drafts granted for money paid into the treasury at Madras.

(d) The balance of bullion sent out of the district

(e) The import of food is now insignificant

(f) The imports, exclusive of grain, were about 10,000 *l* a year, they are now about 60,000 *l*, showing that as the district has more to sell, it buys foreign articles more extensively.

(h) The cloth trade has declined through the competition of England, and is not much affected by the state of the district.

(i) The exports, excepting cloth, are almost exclusively agricultural produce of the district; the increase was last year 244,000 *l*. above the former average of 36,000 *l*, or nearly eight fold It is a *bonâ fide* increase of income to that amount, and 169 000 *l* more than the increase of revenue paid to government. This is beside exports by land.

(k) The sums from this date are those expended on new works only; they amount to 352,000 *l*, which includes all new works in the upper talooks as well as the Delta, and also in half of Masulipatam.

(l) This is the number of boats The average tonnage of the boats is probably more than doubled, and there were besides 2,230 rafts of timber and bamboos, estimated tons carried, 150,000, in 1856–57.

(m) This canal was closed for three months

(n) The increase of revenue in Rajahmundry alone has been 80,000 *l*., and probably more than 10,000 *l*. in Masulipatam, about 40 per cent upon the old revenue, and 25 per cent upon the outlay But by far the greater portion of the lands watered have yet paid no water rate, and only two rupees an acre for one crop where it is levied At the same rate, fully 100,000 *l*. more revenue would be paid if the rate was lowered on all the lands. And the water carriage is all free, about 1,000 miles of connected canal and river.

of Irrigation and Navigation, to 1857-58, taken from the Returns furnished by the Collector and Civil Engineer

Exports by Sea					Expenditure on, Public Works.	Number of Boats passing Main Channel to the Port of Coringa.	Total Number of Boats passing the Three Main Channels from the Weir	
Cloth	Agricultural Produce, &c	Averages.	Total Exports.	Averages				
12	13	14	15	16.	17	18	19	
£	£	£	£.	£.	£			
(h)	(i)							
44,000	25,000	36,000	69,000	57,000	900	- -	- -	Insufficient rain
41,000	24,000		65,000		590	- -	- -	Unseasonable rain.
43,000	20,000		43,000		1,690	-	- -	Hurricane and inundation of the sea, causing much damage
19,000	17,000		36,000		1,980	- -	- -	Extreme distress these two years
21,000	9,000		30,000		4,080	- -	- -	Scanty rain
17,000	29,000		46,000		1,720	- -	- -	Seasonable weather Abundant crops
16,000	41,000		57,000		1,220	- -	- -	Ordinary season
11,000	53,000		64,000		3,780	- -	- -	Saver abolished Great distress from severe (river) floods
10,000	63,000		73,000		3,420	- -	- -	Favourable year
14,000	77,000		91,000		4,470	- -	- -	Scanty rain
40,000	97,000	93,000	137,000	114,000	(k) 24,400	- -	- -	Abundant produce
18,000	92,000		110,000		18,700	- -	- -	Ditto Two Talooks received water
12,000	103,000		115,000		27,500	- -	- -	Heavy (river) floods and inundations Considerable loss
15,000	81,000		96,000		18,200	- -	- -	High floods Ponasa failed Rice crop abundant
16,000	124,000	140,000	140,000	154,000	24,100	- (l) -	- -	Ordinary year
13,000	118,000		131,000		16,600	752	- -	Rain abundant
11,000	152,000		163,000		33,700	2,300	- -	Very high floods Damage inconsiderable
16,000	167,000		183,000		36,900	7,400	11,300	Drought, and consequent high prices
13,000	150,000	164,000	163,000	176,000	45,300	8,300	18,900	Heavy rains and high freshes
11,000	170,000		190,000		47,400	9,400	- -	Rains moderate, singular failure of freshes in the Godavery
13,000	162,000		175,000		59,900	13,400	- -	Not reported
13,000	280,000	280,000	293,000	293,000	- -	9,600	- (m) -	Scanty rains
- -	159,000	—						

Comparison of the Two Years 1845-46 and 1857-58

Years	Price of Rice per Ton	Revenue	Exports of Produce	Collector's Remarks on the Seasons
	£ s d	£	£	
1845-46	4 5 -	200,000	77,000	Scanty rains
1857-58	4 7 -	275,000	280,000	- ditto.
	Increase or	75,000	203,000	
	per Cent	37½	260	

That is, in similar unfavourable seasons, before and after the works, the revenue now is 37½ per cent higher, and the exports 260 per cent. greater than in the former period

Comparison of the Years 1841-42 and 1855-56

Years.	Price of Rice per Ton	Revenue	Exports of Produce	Collector's Remarks on the Seasons.
	£ s d	£	£	
1841-42	3 3 -	210,000	29,000	Seasonable weather Abundant crops.
1855-56	4 12 -	279,000	170,000	Rains moderate, singular failure of freshes in the Godavery.
	Increase or	49,000	141,000	
	per Cent.	23	490	

That is, in similar good seasons (when such works are least required). The revenue lately was 23 per cent. higher, and the exports 490 per cent. higher than before the works.

Comparison of the Years 1841-42 and 1857-58.

Years	Price of Rice per Ton	Revenue	Exports of Produce.	Collector's Remarks on the Seasons.
	£. s. d.	£	£	
1841-42	3 3 -	210,000	29,000	Seasonable weather Abundant crops, but large Imports of grain from Aracan.
1857-58	4 7 -	275,000	280,000	Scanty rains
	Increase or	65,000	251,000	
	per Cent	32	870	

That is, in a year of scanty rain, the revenue is now 32 per cent. higher, and the exports of produce 870 fold greater than in an abundant season before the works.

LETTER from Colonel *A. Cotton*, Commandant of Engineers, to *T. Pycroft*, Esq. Chief Secretary to Government, dated Jaulna, 8 December 1858.

Sir,

I HAVE the honour to transmit an addition to my memorandum on the proposed Southern Mahratta Railway, and to request that the former part may not be transmitted anywhere without this.

Addition to a Memorandum on the proposed Hyderabad and Sedshegur Railway, by Colonel *A. Cotton.*

At the half-yearly general meeting of the East India Railway (Calcutta) Company of the 28th October 1858, the Chairman, Mr. Crawford, stated that he calculated the cost of the 120 miles from Calcutta to Runugunj was about 1,200,000*l.*, or 120 lacs, and that the net revenue for the half-year was at the rate of 7½ per cent. per annum. This, as in all the other statements of this sort, omits the two great items of railway expenses, depreciation and repairs, the actual expenditure on the latter being, as before stated, of course, insignificant while everything is new. This 7½ would give a sum of 90,000*l.*, or nine lacs, as the annual profit on the 120 lacs. The Chairman also stated that they had determined to build steamboats to carry their railway material by the river. A shareholder inquired what the cost of the steamboats would be; to which the Chairman replied, "that 80,000*l.* (eight lacs,) would cover the whole expense, and they hoped to save that sum in the first year." (Overland Mail)

It seems to me impossible that no stronger testimony to the principles I insist upon as to communications in India, could be afforded than this striking fact affords. This is not the "theory" of an advocate for water carriage, but the sober and sure judgment of the head of the principal railway undertaking in India. It is his deliberate judgment, openly declared in the presence of a large assembly of railway shareholders, that while, after several years from the commencement of the expenditure, on by far the most important line of railway in India, the first 120 miles of the line of greatest traffic, the north-west approach to the capital of all India, the profit is 7½ per cent., he expects, that in the first year, the profit on capital expended on river navigation will be 100 per cent. If there is one person above all others who would be liable to a bias in his judgment against the views I have taken on this great question of suitable communications for India, it would certainly be the Chairman of the principal Railway Company of India, and it is therefore with peculiar satisfaction that I am thus enabled to add his testimony to those of the Secretary of State for India, the Madras Government, and Mr. Balston, a railway contractor, as entirely concurring with me, that capital would be incomparably better expended in working even our present unimproved natural waterways than in making land communications at a cost of 10 000*l.* a mile.

If the Chairman's judgment in this case is correct, the following would be the returns upon the East India Railway Company's expenditure when the steamers are at work:

CAPITAL.

120 miles of Railway - - - - -	£.1,200,000
Steamers - - - - - - - -	80,000
TOTAL - -	£. 1,280,000

PROFITS.

7½ per cent. on 1,200,000*l.* - - - -	£. 90,000
100 per cent. on 80,000*l.* - - - - - -	80,000
TOTAL - - -	£. 170,000

The profits upon the combined expenditure would thus be more than 13 per cent. of which seven would be obtained from 1,200,000*l.* spent on the railway, and six from the 80,000*l.* spent on river navigation. I have not the least doubt that this is substantially a true estimate of the comparative effects of capital spent on the two different kinds of transit, water and land, though the cost of the railway is probably considerably under-estimated, and the profits certainly much over estimated, inasmuch as no allowance is made for depreciation and only a trifle for repairs

If the Company thus employ only a small portion of their capital on water communications, I have no doubt that the profits upon the whole will be very fair.

Thus we see that now at length after so many years, and after so many millions have been wasted, the leaders of the railway system in India have come to the very conclusion that Mr. Bourne arrived at 10 years ago, immediately on his seeing the actual state of things in the country

But does it not appear wonderful that neither the Chairman himself should be startled at his own figures, nor any one of the shareholders present, that they should not put these two things together, and say, "But if we can only get 7½ per cent. for our capital expended on railways, after losing the interest for several years, even on by far the most important piece of communication in India, while we can get 100 per cent. on capital invested in river navigation, the first year, what in the world are we doing, to spend our money on such comparatively unremunerative works? Nobody can oblige us to waste our capital in this way; we ought certainly, without further waste of time or money, to employ all our capital in future in such enormously profitable undertakings as water transit."

It seems to me highly probable that the end of this company will be similar to that of the Scinde Company who are preparing to navigate the Indus, and that thus these great railway companies will become in reality river navigation companies, for the heavy pressure of large profits on the capital so expended, will overcome all scruples about their being accused of being thus forced by their acts to acknowledge their opponents to have been right If by a judicious expenditure of one lac on navigation for every 16 lacs spent on the railway they can double their profits upon their whole capital, no doubt they will follow up that plan.

I will only add, that surely it will be acknowledged by all that the amount of profits that can be obtained by capital expended on different public works, is the best and indeed only true test of the suitableness of those works to the state of the country If working the rivers will yield 100 per cent and working railways will only yield 7½ per cent. it is most certain that what the country wants is water carriage and not land carriage If the head of the principal company of India is so satisfied that river navigation will yield returns 13 times as great as the most productive 120 miles of railway in India, I think we may safely conclude that such views are no longer "theories." If the facts which support them are so strong as entirely to overpower all the natural bias of the leading railway man against them and to lead him to make such an open and unqualified avowal of his adoption of those views even before a large meeting exclusively composed of railway men, and to act upon them to such an extent as to spend eight lacs of rupees upon operations totally different from and indeed directly antagonistic to those for which the company was ostensibly formed, I think the question may be considered as decided in favour of water carriage.

If in future this is to be called a "theory," let it, at all events, be called "Mr. Crawford's theory," "the theory of the Chairman of the Calcutta Railway."

(signed) *A. Cotton*, Colonel,
Commandant of Engineers.

India Office, 14 April 1859.

(True copies.)
(signed) W. T. Thornton,
Secretary, Public Works Department.

— No. 3. —

REPORTS on the HARBOUR of BEITKUL in Sedashighur Bay, by Colonel *A. T. Cotton*, Madras Engineers, and Lieutenant *A. D. Taylor*, I. N.

(No. 1932.)

From the Chief Engineer in the Department of Public Works, to the Secretary to the Marine Board, Madras.

Central Office of Public Works, Fort St. George,
18th October 1855.

Sir,

arme

Original Plans with Copies Enclosures.

I HAVE the honour to forward herewith, copy of a letter from the Collector of Canara, transmitting a very able and interesting Report drawn up by Lieutenant Taylor of the I. N., upon the proposed establishment of a Harbour of Refuge in the Beitkul Cove, adjoining the port of Sedashighur on the western coast; and shall feel greatly obliged by your submitting the same for the early consideration and report of the Marine Board, for the information of Government. It is to be apprehended that if the Government, guided by the opinion of your Board, should direct the prosecution of the project, and the investigation of the Civil Engineer into the feasibility of the proposed canal to connect the harbour with the port on which the convenience of the trade is obviously so greatly dependent, it cannot at this advanced period of the year, be practicable to have the estimate of the probable expense prepared in time for entry in the Budget for 1856-7; and no actual outlay can be expected to take place therefore, before the 1st May 1857. Of course the advisability of constructing the several works required for the completion of the Harbour of Refuge on that dangerous and exposed coast, will rest in a great measure, upon the expenditure at which the sea walls and possibly the wharves, can be established; but I am fully under the impression, that the information already afforded in Lieutenant Taylor's report, is sufficient to enable the Marine Board to arrive at a decisive opinion respecting the general merits of the project.

2. I also transmit the two original charts prepared by Lieutenant Taylor, and as I have already transferred them to the stone, as by a specimen now forwarded for record in your office you will observe (the originals being obligingly returned), I have to request that you will do me the favour to state, to what extent these charts will be of value to the navigator on the western coast. I shall be thankful to have this information as soon as convenient, in order to regulate the number of impressions; and for which purpose it is further desirable, that the relative value of the smaller and larger scale for general use, should be made known to me.

3. I will have the charts mounted on cloth for better preservation, and should wish to learn what number might be supplied with advantage to your office, to the Collector of Canara, and to the Government of Bombay; and also whether these should be supplied to the public gratuitously, or at a cost, to cover the expenses of preparation, of say one rupee each.

I have, &c.
(signed) *C. E. Faber*, Lieut. Col. of Engineers,
Chief Engineer in the D. P. Works.

(A true copy.)
(signed) H. Thomson,
Acting Secretary.

(No. 5.)

From *W. Fisher*, Esq., Acting Collector of Canara, to the Chief Engineer, Madras

Collector's Cutcherry, Mangalore,
Sir, 27th September 1855.

I HAVE the honour to forward for the information of Government, copy of a report (accompanied by two original plans) from Lieutenant Taylor, I. N., giving the result of his examination of Sedashighur Bay and Beitkul cove, and proposing that a shipping port and Harbour of Refuge be constructed behind Carvar Head.

2. Few spots on any coast would present equal facilities for the construction of a port commanding a valuable and extensive trade, and at the same time possessing so many qualities which admirably adapt it for a Harbour of Refuge, the great want on this long and dangerous line of coast.

3. Lieutenant Taylor's report illustrated by his plans, leaves me little to do but to recommend his project to the attention of Government. This I do most earnestly as regards the larger work proposed, but it seems to me imprudent to risk certain and great advantages for the sake of obtaining early possession of a small portion of them. This I think we should do, in erecting the proposed elbow to protect a communication with the river from the wash of the sea, whilst the construction of the main breakwater is in progress

4. I should rather hope that Government in undertaking this great and useful work, would so employ the resources at their command, as to leave the Bombay trade and that of the western coast generally but a short period to wait for a complete and excellent refuge, when such a harbour has not only been a long admitted want, but one which Government has been anxious to supply.

5. I will only add, that Beitkul cove affords fresh water of good quality and in abundance; points of great importance in estimating the value of the locality

I have, &c,
(signed) *W. Fisher*,
Acting Collector

(True copy)
(signed) C. E. Faber, Lieut. Col. of Engineers.
Chief Engineer D. P. W

(True copy.)
(signed) H. Thomson,
Acting Secretary.

From Lieutenant *A. D. Taylor*, Commanding H.C. Surveying Vessel "Pownah," to *W. Fisher* Esq, Collector of Canara

Sir,

I HAVE the honour to forward for the information of the Madras Government, the accompanying plans and report upon the Sedashigur bay and Beitkul cove.

1. We have visited the cove frequently in the worst of weather, and found it remarkably smooth and well adapted for a harbour, and I would here state what, on mature consideration, I deem the best measures to render it a safe and convenient one.

2. For easy reference the plans are lettered; No 1, is a chart of the entire Sedashigur bay and river mouth, and on it have been detailed all facts of importance to the navigator, in case Government should wish to have copies of it lithographed at Madras or Calcutta.

No. 2. Is on twice the scale of the other, and is intended to show the Beitkul cove, more distinctly with reference to my propositions for a harbour.

3. The blue curved lines are meant to represent the monsoon swell as it rolls into the bay, they show how the force of that ocean swell must be broken, by the high, rocky, west cape of Beitkul, called by navigators Carwar Head.

4 As the river entrance is unapproachable in the south west monsoon for cargo boats, it becomes necessary to consider how far this excellent river could be made available for carrying goods from Mallapore to Beitkul harbour (20 miles), so as to supersede land carriage altogether.

5. This, to my mind, could be effected by a canal from Sinkerry creek to the south extreme of the sandy bay (A. on the plan in red), a distance of about three statute miles; already there are creeks which fill at high-water over half this distance.

6 From A, where the canal could not *débouche* into the open sea of the south west monsoon (nor even when the north-west winds occur in force), I would propose to throw out a breakwater in a westerly direction for about 1,200 yards to B., this would afford protection to boats from the canal, and would form the north east side of the harbour.

7. A breakwater about 200 yards in length from the point C would form the north-west opposition to the swell that rolls round the point.

8 Thus we should have a harbour of great extent, with 21 feet water at its entrance, at the very lowest spring tides (26 to 28 at high water) and with an area of five or six acres, having 19 and 20 feet sufficient for several large vessels, the bottom being soft mud they would suffer no injury from grounding. The general area of that part of the harbour, which has a depth of from 15 to 21 feet at low water, would be upwards of 20 acres, and the bottom nothing but soft mud.

9. On the western side of the bay, on the space within the red line G, a wharf on piles filled up at the back with earth and stones could be constructed to allow vessels to be alongside, with warehouses in the back ground.

10. But if the breakwater A. B were built substantially enough for a wharf (its inner side on piles) it would make an excellent one, as the warehouses could then be on the sand A., where any amount of ground is available.

11 And alongside this wharf we should have a space of 300 to 400 yards in length, where six or eightvessels of 500 to 1,000 tons could load with facility, at all times of tide and in all weather

12. Indeed, although I have marked the site for a wharf on the west side, A B. claims superior attention, as the merchants' warehouses could be erected at once at A, and at no expense, compared to the scheme of construction on piles.

13. The natives say that Beitkul cove has not diminished in depth within their recollection, nor would there be in the above plan for a harbour, any forces brought into play that would tend to fill it up.

14. In the above proposal for rendering Beitkul a convenient harbour, the great consideration has been to maintain an uninterrupted line of water communication from Malapore to it; thus I hope to have shown it to be a perfectly practicable, and I think not very costly undertaking, when the advantages gained are considered.

15 The breakwater A. B. would be necessary to keep off the swell caused by the north-west winds which prevail from March to the setting in of the south-west monsoon, and which are annoying to the native craft, though but little felt by a large ship. But to ensure the permanency of such a work, and to render it of use as a wharf, it must be substantially built, and thus would occupy some time in erection.

16. I am well aware of the importance attached by Government to the attainment of a harbour of refuge on this coast (such a one as I have sketched above might have saved the unfortunate steam-frigate "Cleopatra," in April 1847), and this has led me to the proposition of such extensive works, knowing too the

anxiety of the merchants to settle here at once. I shall towards the conclusion of this report, state what minor works I would recommend so as to enable the trade to be developed earlier, and to be even carried on if need be, during the monsoon of next year.

17. It was my opinion at first that the bay marked S., in blue, would have formed the best harbour, as deep water with muddy bottom occurs there so close to the shore, and there is shelter for two vessels already in four fathoms at low water, were moorings laid down for them as represented by the two red circles, where the sea is remarkably smooth

18. This plan would have rendered it necessary to build a breakwater at T. to protect the wharf on piles that would have to be erected at the rocks marked V., and a road along the water's edge would be needed to Beitkul bay.

19. This would involve considerable expense, and the bay would be open to the north-west winds if other works of a like nature to those at the other bay were not constructed.

20. Nevertheless, this bay will be useful in connexion with Beitkul harbour as a point of departure and arrival of vessels there; they would pick up a pilot to conduct them into the harbour, and thence they would make sail to fetch out of the bay, having previously warped there by means of the mooring buoys I have marked with red circles, from the entrance of our harbour This latter course is rendered unavoidable from the cove being so far to leeward, and though a disadvantage, is but a trifling one compared to those attendant upon some of our finest harbours: Calcutta, where there are many miles of intricate river navigation to be got over, Bombay, where the great difficulty in boisterous weather is to get a sufficient offing in one ebb tide, to enable a vessel to clear the coast, which there lies south from the lighthouse.

21. A vessel leaving the westernmost mooring in that little bay would fetch out clear of Deoghur Island, tack so as to pass the leeward of the Oyster Rocks and to windward of the Elephant Island, when she has a clear south-east by south course before her down the coast

22 The ebb tide would assist her out, and yet another powerful influence is there in her favour, which is that during the south-west monsoon, when the current sets down the Malabar coast at the rate of two or three miles an hour, sometimes it runs into Sedashigur bay, as represented by the red arrows in No 1 chart, and escapes along the Beitkul or Carwar Cliffs as therein shown, high-water being chosen as the starting time, there will be one fathom more water than shown in the chart.

23. As a proof of how the swell and force of the wind is broken by the intervention of the lofty Carwar Head, I may here state that my assistant, Lieutenant Sweny, went out to the bay S. on July 17th, as boisterous a day as we have had this monsoon, in a small canoe with no outrigger, when the wash of the sea was found to be not more than 1½ feet in the little sandy spot shown in plan No 2, and a landing could have been easily effected.

24 Were a breakwater of 100 yards length constructed from the west point of that bay, mooring ground for five or six large vessels could be obtained, but this might be left as an ulterior measure, should the port become of sufficient importance to warrant such additional expense.

25 Sedashigur bay seems by nature designed for a harbour. We have high land (Goodhully) peak (1,800 feet above the sea) less than three miles to the eastward of Beitkul, Carwar Head is 640 feet high, and admirably adapted for the site of a lighthouse (marked L. in the plan) which would be needed. The Oyster Rocks, an excellent breakwater behind which vessels may anchor on their first arrival; these rocks or islands in their highest part are 160 feet above the sea, and being so far out, form excellent landmarks.

26 It were needless to say how great an advantage our proposed harbour would be to the native coasting vessels as a port of refuge in the gales that are periodically experienced along this coast.

27. The lighthouse need be of very little height, say 20 feet, and if of the same breadth at base, and kept white, would be a fine conspicuous object in the day time.

28 Vessels bound to Sedashigur should in the south-west monsoon endeavour to make the coast by Cape Ramos, for if they get to the southward of the port, much difficulty will be experienced in getting to the northward against the strong current which in this season of the year sets down the coast.

29. As every project for diminishing the cost of such an undertaking as I have proposed cannot but be acceptable to Government, I suggest that the old guns of the fort (totally useless any longer as such) some twenty in number, be used for the moorings recommended above, as guns are used in Bombay. Along the coasts of Concan and Canara there must be nearly three hundred which could be most advantageously employed in the manner mentioned, and as posts along the wharf.

30 Now to the measures which could be presently adopted to ensure the early opening of our port for vessels of 500 to 600 tons. The black circle denotes the position for them to anchor at, in 3¼ fathoms at low water spring; the bottom soft mud, where it will be found much smoother than Bombay harbour, and there is no tidal current to disturb them.

31. The erection of warehouses could be proceeded with by the fishing village, A , advantage being taken of the river to bring goods from Mallapore to the present ferry, opposite Sedashigur port, whence they could be taken on carts or bullocks to A

32. By throwing out a breakwater, M. N. O. and clearing out the channel between it and the cliffs to gain a depth of 5 or 6 feet at high water, (in fact making the commencement of the breakwater A B as far as N. where it would be necessary to turn it to the south-west for a short distance to prevent the sea breaking into its mouth), boats could start with their cargoes from N. and carry them alongside the vessel, with much more safety and less trouble than is experienced at Bombay. The little bay, p. q. is where we always embarked during this monsoon in a canoe, to prosecute our investigations on the locality of the harbour, and is remarkably smooth.

33. This breakwater channel is all that is requisite to facilitate the conveyance of merchandise to ships in Beitkul until the completion of the harbour, when the more expeditious method of loading from a wharf will supersede it.

34 Referring to para 20, it seems to me, that if one of the small steamers of Bombay, which are idle during the south-west monsoon, were here employed to tow vessels out to Carwar Head, the saving of time and trouble would be great.

35. The entrance of Sedashigur river has this year moved a little more northward, and now is close to the large black rock marked K. on the chart, and, owing to scanty rains and to the Madhully stream having this year broken out to the southward of the rock, as shown by the blue tinted lines which represent its present limits, the bar has diminished in depth. At present the sea is too rough for us to examine it afresh, but I shall not fail to do so when practicable, and to show on the plan the amount of alteration.

36. It is my opinion that the construction of any works to bring the stream permanently into its former channel of 50 years ago, so strong in its monsoon fresh, would cost half as much as the proposed breakwaters in Beitkul cove, and there can be little doubt that the native vessels would prefer Beitkul, were the water communication with it and the river kept open by means of the canal.

37. During the months of November, December, January, and February, when the land winds prevail, the sea is calm, and the traffic likely to be greatest, the river mouth can be taken advantage of, in carrying goods to and from Beitkul.

38 In conclusion, I have the honour to state, that I have already commenced the survey of this river towards Mallapore, but the late heavy rain has been a

great drawback to the completion of this duty. I shall proceed to examine the Tuddree as you have requested. The means at my command are very limited at present, having only my tender with me; but I have requested the Commander in Chief of the Indian Navy, to send me the "Pownah" again as early as possible, and I have just learnt that she is being made ready, and will be here in a month.

I have, &c.
Sedashigur, 13 September 1855.
(signed) *A. D. Taylor*, Lieutenant, I. N.,
Commanding H. C. S. Vessel, "Pownah"

(True copy.)
(signed) W. Fisher, Acting Collector.

(True copy of a copy.)
(signed) C. E. Faber, Lieut. Col. of Engineers,
Chief Engineer, D. P. Works.

(True copy.)
(signed) H. Thomson, Acting Secretary.

From Lieutenant *A. D. Taylor*, I. N., commanding H. C. S. Vessel "Pownah," to *Henry Forbes*, Esq., Acting Secretary to Government.

Sir,

In forwarding the following report on the harbours and rivers of Canara, called for by Government in Extract No. 1279, of Minutes of Consultation, dated 1st July 1857, I have the honour to state that, since the monsoon of 1855, I have, by order of the Commander in Chief of the Indian Navy, been engaged on the survey of the Canara and Malabar coasts, which duty, owing to my almost constant ill health from March to November 1856, was only completed in April last.

2. I need not repeat my former report on Sedashigur Bay and the harbour of Beitkul, but I would mention that the plan for a harbour proposed by me was considered by Colonel Arthur Cotton to be of too limited a nature to meet the growing wants of the country. It was therefore proposed to take the whole bay between Coormagur Island and Carwar Head for a large harbour.

Sedashigur Harbour.

3. This was to be effected by a sea breakwater of loose stone, from Carwar Head towards the islands, about 1,000 yards long, with an opening 400 feet wide at a distance of 400 yards from the Head. Another breakwater from the point of Deoghur Island, and about 500 yards long, would protect the harbour against any swell from the north-west, whilst the Oyster Rocks would nullify the effect of any westerly swell. There cannot be a doubt that this more comprehensive scheme would be of greater ultimate benefit. Beitkul Cove now offers shelter for small vessels, and the construction of the above works extending over several years, the harbour would get gradually better year by year as the produce from the interior increased.

The present wants of Bombay Harbour.

4. But I am reminded that harbours can be too large as well as too small by the late discussion regarding that of Bombay, where, in November 1854, so many vessels were wrecked by a gale from the eastward. A similar warning occurred in 1837 that was neglected, but now the attention of Government and the merchants is steadily directed to the grand object of giving more shelter to vessels whilst loading or unloading cargo. Wet docks were proposed by Government engineers, but such works are so liable to silt up, especially in the muddy harbour of Bombay, that it seems to me that scheme will never be adopted. Wharf walls (running parallel, I suppose, to the ebb and flow of tide) are proposed by a civil engineer, to cost the enormous sum of 89 ½ lacs. Some modification of the latter

project will, I think, be accepted, but will doubtless be undertaken by a joint-stock company, and not by the Indian Government Bombay Harbour is entirely open on its south side; the ocean swell from S S W. rolls almost unimpeded over the space in which the merchant shipping lie; to the S. S. E there is an expanse of water eight miles in length; a gale blowing over this causes a heavy swell.

dvantages of eitkul Harbour

5 Now the main desideratum of a harbour of refuge on the west coast is that its south side should be a natural defence against the south-west swell of our rainy season gales and periodical hurricanes Carwar Head is pre-eminently such Our north-west winds from March to May are but trifles to a large ship, and when the wind in a cyclone has got round to north-west, the only point on which our bay is open, the centre of the revolving storm will have passed to the northward, nor is the storm-wave likely to recoil upon our works from the north-west.

6 I mention these things merely to point out that there is as much chance of our falling into error in forming a harbour of too great an extent as there is of our limiting one to too small an area. I have reconsidered the subject in all its bearings, and am now of opinion that my former views were too circumscribed, and that any works to be undertaken at Beitkul should be on a large scale

uddree, a fine-eason Harbour

7. We have a harbour in Tuddree (as I shall presently explain) upon which three ghauts converge, and though making it a south-west monsoon port is out of the question, yet there needs very little to make it the centre of the export trade of North Canara temporarily, whilst the grander port and harbour of refuge of Beitkul is being prepared.

bjections to many mall ports, on one oast

8. There is this to be said with regard to the advisableness of establishing small ports in anticipation of the development of one great harbour, viz, where once a beginning has been made, when shall we cease to add improvement to improvement upon the little ports, and when cease to cherish a rising place. Take Madras itself as an instance in point Had the fort been built abreast of the Armegom or Pulicat Shoals, we should not now be clamouring for works to nullify the effect of the surf, and to render landing easy, for at both those places we should have so fine a nucleus for a sea breakwater that three-fourths of the labour and expense now required to render Madras a safe port would have been saved, and the project would come within the easy means of either Government or a private company. Now that so much has been expended by merchants on warehouses and other buildings, and Madras is become a great commercial port, it is clear that a harbour some few miles distant will never answer, but that one will have to be made here at whatever cost.

9 With these preliminary remarks on the first essentials for a good refuge harbour I shall proceed to state what is needed at Sedashigur. The Marine Board, in their report upon my project for making Beitkul a harbour of refuge, objected to the light being placed on Carwar Head, their preference being given to the Oyster Rocks as the site. In a letter to the Collector of Canara, dated 26 November 1855, in continuation of my first report, I stated my reasons for selecting the Head as the place where the light should be. The Collector's reply was to the effect that the advantages of the proposed harbour had been so clearly pointed out by me, he thought nothing more need be said on the subject. At that time I was ordered by Sir Henry Leeke to continue the coast survey, and until the arrival of the Right Honourable the Governor on the western coast, I had been incapacitated by sickness from giving such attention to the subject as I could have wished.

Lighthouse of first class for Carwar Head, and not on the Oyster Rocks

10. The following remarks are, for the most part, what I wrote in the letter above alluded to; as I can at this distance of time improve upon and add to them, I propose doing so.

Arguments in favour of taking Carwar Head, as the site for a Lighthouse

11. In selecting Carwar Head as the site for a lighthouse, I took into consideration its commanding height above the sea. It is a known fact, which probably the captains of the P. and O. Company's steamers have noticed while passing along this coast, that during the south-west monsoon a vapoury salt spray, rising to a height of some 100 feet, veils the seaboard of Western India, rendering a recognition of the features of the low land no easy task. The Oyster

Rocks, which I at first thought of as the place for a lighthouse, come, in a measure, under the influence of this mist; that is to say, the rocks which project from them on their southern and western sides cause the spray to rise high into the air; and I contend that a light of so little height as these islands would afford, will be less distinguishable at five miles and a half distance than the lofty Carwar light at eight miles; the greater height of the latter, 650 feet, placing it above the limits of this ocean mist.

Arguments against Oyster Rocks.

12. The Oyster Rocks afford no landing-place during south-west gales; their margin is rock-bound, possessing no patch of sand on which a boat might be beached. Some, at no little expense and trouble, would connect the two high islands, which are about 50 yards apart, the interval filled by impassable rocks above and below water; this barrier must be some 30 feet broad and raised at least 10 feet above the water to give any shelter to leeward, but even then we may expect the ocean swell to roll round to the landing-place; the cost of such a barrier would be great.

13. Fresh water is to be found on them during and after the rains, but the scouring of the jungle would not be conducive to health; the transit of supplies would be difficult, and in the event of injury to the lantern or house, no native artificer could be found to brave the passage by sea. It would not suffice that the communication with the main land should be confined only to intervals of fine weather; sickness or accidents to the people in charge, would render it imperative that a large boat should be always at hand.

14. These are some and the most weighty of my reasons, for giving the preference to Carwar Head as the site for a first-class light, whose brilliancy would enable it to be seen 30 miles off from a vessel's deck.

Beitkul is the nearest port to Dharwar cotton country.

15. Our harbour is the nearest seaport to the great Dharwar cotton field; that town itself is but 75 miles, as the crow flies, from Sedashigur; when in my former report I wrote of developing the trade during the ensuing year (1856), I was under the impression that the road to Malipore from the Dharwar district was finished. Mr. Brice, a merchant resident at the latter place, has since undeceived me. The Kyga Ghaut line is opened merely to a bridlepath, and the nullahs are unbridged; he pointed out the immense advantages a rail to Beitkul would ensure, in keeping the goods dry in transit, a point which he looks upon as an essential, as so much loss is now suffered from deterioration of goods by the rain; but, surely, provision against damp could be managed in the boats we would build expressly for the purpose; the rail would cost an enormous sum, and could not possibly compete with water carriage.

16. The ordinary traffic roads are now nearly impassable during four and a half months of the year, June to middle of October, and with any increase to that traffic, such as we may expect on the opening of our port, the wretched state of these roads during the rains will be a serious drawback. There are no works commenced at Sedashigur that would render it of importance in a pecuniary point of view, to prevent their supersession by others, however more feasible; on the contrary, the harbour and its approaches are as nature formed them, there is nothing to alter; before us lies an entirely new field of greatest promise, all that is requisite is to look before we leap, to see that the most advantageous scheme be selected. If the trade of the interior is to be brought to the sea, a harbour on this coast, of easy access, sheltered from all winds, capable of receiving very large vessels, and at one tithe of the distance from the internal resources of the country that the Madras or east coast is, where there are no safe harbours, would surely be preferred.

The great advantage of a high light.

17. The above is what I wrote before to show that I had not overlooked the Oyster Rocks, when considering where to place my principal light. It is a grievous mistake to place a first-class light on a low hill, when not far off there is one four times the height. Besides, there is this to be said in favour of high lights, that they are visible so much further from the deck of a ship, by aid of a telescope, which is a difficult instrument to handle at the mast head, where the motion is of course so much more violent, and footing insecure.

18. I agree so far with the Marine Board, that the Oyster Rocks should have some landmark on them, and I would recommend that a small white house (to serve

Small light and a Signal Gun on Oyster Rocks

serve also as a column for a small light), be built on them, where a few fishermen could live in the south-west monsoon, keeping provisions enough for their maintenance; breaks in the weather, afford occasional though not frequent opportunities, of communicating with Beitkul Cove. It should be the duty of these men to burn blue lights either at stated times (as at the outer light-vessels in Bombay), on observing lights at sea, or hearing guns. A signal gun should be placed there. The Oyster Rocks, though 160 feet high, have loose granite boulders on their summit; levelling these, and making a place for signal guns, would reduce the height considerably, so that a column of 40 feet would give the light a height of 160 feet still.

Light on Carwar, isible 30 miles, Oyster light only 8 miles

19. The small light on those islets would not interfere with that on Carwar Head, which is so lofty as to be visible from the deck of any vessel at 30 miles distance; whereas the light on the Oysters, if 160 feet above the sea, would be only seen in fine weather 18 miles; the distance between the two is two miles and a quarter, so that the greater light would be visible for some time before the other, and when both are visible, that on the Head would appear so much more exalted and brilliant. I would wish to explain more fully what I said about the salt spray of the ocean; it hangs like vapour above the sea, and so dims distant objects, that land 200 feet high, which can be seen in clear weather 15 miles off, is scarcely discernible during the south-west monsoon on the west coast, (even when rain is not falling,) at half that distance.

20. I need say no more regarding the lighthouse on Carwar Head, but that breadth is what is wanted, not height in the building. We have the necessary altitude in the hill itself.

Proposed works for Beitkul Harbour.

21. Adverting to my former report, I would now reject the two piers at the mouth of the cove, but would increase that proposed at the point T. (*vide* plans Nos. 3 and 2) to a length of 400 yards in a line due north, leaving an opening of 400 feet wide at the water's edge. I would continue the breakwater in a line N.N E. as shown on the plans Nos. 2 and 3. The stone for these works could easily be quarried from the hill, and they would give at once great security to Beitkul by increasing the anchoring ground for large vessels; and with the canal from the Kalee Nuddy, which I would have as shown by the blue line in Chart No. 2, (and not as formerly suggested by the Sinkerry Creek) the produce of the country above the ghauts, could be brought from the present head of navigation, about two miles above Malapore, to the shipping in Beitkul by the same boat.

Canal, to join the River to the Harbour.

22. A subsequent examination of the Sinkerry Creek, and of the shoals in its neighbourhood, led me to alter the proposed line of canal; my new line commences from the deep water of the south bank, nearly opposite Sedashigur old Fort, and marked blue on plan No. 2, pursuing a nearly due south course to the fishing village near Beitkul; this is 4,400 yards, or two and a half statute miles long, with a rough stone breakwater running along the rocky cliff by the fishing village, and turning down to the south-west so as to protect the canal mouth; the water communication all the way from above Malapore to Beitkul will be perfected.

Present roads, bad in rainy season

23. With the present means of communication between the coast and the interior, and until by covered boats on the rivers, and by covered carriages (on perhaps lines of light rail) above and below ghaut, the goods can be carried dry to any part, it is needless to expect merchants to avail themselves of any but the ~~five~~ fine months, viz., October to May, for shipping goods at any port. The rain is now our greatest drawback on the western coast. With a canal system it will facilitate progress.

Lines of Canal, wanted for North Canara.

24. The proximate lines of canal to connect all our present roads from the ghauts with our harbour are shown on the accompanying plan, No. 1, in blue tint; these are all that are required to connect all the rivers north of Honore with Beitkul; that there is comparatively but little work in this undertaking will be evident at a glance. In such a tract of country as that between the west ghauts and the sea, where for two or three months of the year the freshes come down with great violence, overflowing the banks in many places for hundreds of yards, and sometimes bearing on the surface of the water enormous trees, which threaten destruction to any bridge of boats, where stone or strong wood bridges requiring great span would be most costly; in such a country canals are clearly the proper highways.

Canals, and not roads, suited to the wants of Canara.

highways. A journey from north to south of Canara is now a tedious business; a constant shifting from palankeen or horse to boat and back again; canals with suitable boats will remedy all this, and enable passengers and goods to travel at one tithe of the present cost, and certainly as quick. I cannot resist the temptation to state the fact, that horses do not thrive in Canara during the season of the cutting land winds, neither do bullocks thrive, there being great difficulty in getting grass for one-fourth of the year.

How far Kalee Nuddy is, or may be open.

25. My survey of Sadashigur River, or the Kalee Nuddy, is herewith forwarded. It shows the river to be navigable 20 or 22 miles up, or to about two miles above Malapore, at which place my survey ended, but will be resumed when the rainy season is over, if it can be made navigable for 15 miles more (as is most likely from all accounts), a great advantage will be gained, the importance of which I shall not overlook.

Effects of a groin, at the Kalee Nuddy entrance

Another object gained by the groin

26. The entrance of the river has improved since my first examination in January 1855, having moved northward until stopped by the black rock, which, forming a natural groin, deflects the stream, and will doubtless keep it in one channel henceforth; already has this groin operated to advantage, the entrance channel has now 15 feet at low water, and 21 feet at high water, and this will admit vessels of 500 tons in the fine season; they will be able to lie off the steep south bank, near the entrance of my proposed canal, where a pier, 100 yards long, would give 20 feet water at its head Another advantage is gained by the entrance of the Kalee Nuddy being kept so far north, which is, that the alluvium brought down by the river freshes, is, on its exit to the ocean, encountered by the south-west swell, and deposited to the eastward of those rocks, situated about a mile to the north-west of the Groin Rock (*vide* plan, No. 2), which rocks are now joined to the mainland by a sand spit, dry at low water; thus is the deposit prevented from entering the southern portion of Sedashigur Bay, where our harbour is to be.

Roads that come down upon the Kalee Nuddy

27. There are no impediments to boat navigation up to Malapore, nearly opposite that place the Singawady Ghaut comes down to the river on the right or north bank; on the south bank is the Kyga Ghaut; these two roads, when completed, should bring the whole of the Southern Mahratta Country cotton and other produce to Beitkul. The rains, which commence in April by the western ghauts, make the roads very heavy, and do much damage to the cotton, so that very little arrives on the coast from the interior before the south-west monsoon sets in, the greater part being kept above ghaut until the rains are over; until then a harbour be obtained, it is of little use having the roads kept in good repair during the rainy season, when there is no traffic.

Devimunny Ghaut

Arbyle Ghaut line of road.

How it may be improved.

28. At present the cotton goes down by principally the Devimunny Ghaut to Cutgal, on the north bank of the Tuddree River, thence, instead of going by boat to Tuddree, it is carried in carts up a hill again, and then down to the Munky Ferry, about two miles and a half from Coomta town, the carts, bullocks, and cotton are then carried across the stream, a breadth of 300 yards, when the carts, being reloaded, proceed onwards to Coomta. Some carts come down the Arbyle Ghaut, but the ferry on the Gungavelly River between Sooksaul and Goondabaly, which is fordable for only six or seven months of the year, is a great drawback The Gungavelly River from this ferry to its mouth is navigable all the year round, clearly then it should be used, and connected to the Tuddree by a canal, as represented in the Coast Chart, No. 1; the details of this arrangement will be found under the head of Tuddree. An estimate was made by the late Civil Engineer of Canara for bridging the river by the above-mentioned ferry, this bridge was to cost half or three-fourths of a lac of rupees; now I am certain the small piece of canal which I recommend cannot cost more than a quarter of a lac.

Tuddree a fine-season Port.

Arbyle Ghaut

Devimunny Ghaut.

29. But we have a fine season port in Tuddree, which is far superior to Coomta, from which most of the up-country produce is now exported, with a small canal of less than one mile and a half in length (*vide* letter A. on No. 1, Canal Chart); the Gungavelly River can be connected with the Tuddree, and so the Arbyle Ghaut be made of use during the whole year, instead of only being an indifferent road for two-thirds of the year, as it is at present. Then, again the produce that is brought down the Devimunny Ghaut should go no farther by land than

eelcoond Ghaut.

Cutgal, where it could be put on boats, and sent to Tuddree at far less cost than by the present system, which carries it up a hill 200 feet high along its top, and down again to Munky Ferry, a distance of six miles; then over the ferry, which involves the operation of unloading on one side and reloading on the other, and then a three-mile drive to Coomta. The Neelcoond Ghaut comes down upon the Tuddree River some miles above Oopenputnum, the river could either be improved, or the road made along its right or north-east bank to the highest point where it is now navigable above Oopenputnum, and thus the Neelcoond Ghaut be brought down to Tuddree at but little expense.

uddree Harbour

essels of 400 tons an enter

The Bar may be deepened

Export duty can be levied.

30. With these three ghauts (excellent during the fine season) coming down upon Tuddree, that port ought to be the most frequented, as it is the most excellent on the coast. It is sealed for 2½ months in the year, or from middle of May to beginning of August, after which large vessels might lie outside of the river, and others of less than 400 tons could run in and load. There is now 11 feet at low water, and 18 at highest on the bar, and I have no doubt we could get upwards of 21 feet by preventing the first of the ebb-tide from running out over the sands on the west side of entrance. This I propose doing by a groin of loose stone, thrown down as marked in red on the plan of Tuddree, No 5, accompanying this report This work would cost some 10,000 rupees, which will be recovered by the additional duty that would be levied on grain and other produce embarked in square-rigged vessels from Tuddree direct; at present all this goes to Bombay in native crafts, and there the duty is collected instead of in Canara. Before the harbour of Beitkul can possibly be ready to receive vessels, this work at Tuddree will have paid for itself over and over again

Tuddree

Present refuge harbour for the native vessels

Light at Tuddree instead of at Coomta

At what times the light is wanted

31. Tuddree is the haven for which many native vessels steer in our periodical cyclones and southerly gales; it is the next port north of Cochin, and, with a lighthouse, would be a nice harbour of refuge for the native craft. It is 25 miles more to windward than Sedashigur in the above-mentioned breezes, and a small port-light here could never be mistaken for the lofty one which it is proposed to place on Carwar Head, which, as I have said before, should be a first-class light, like that of Madras. With the interests of Canara fully at heart, I deem it my duty here to record my opinion that a lighthouse and flagstaff on the high land west of Tuddree would be of far greater general advantage than the present column of Coomta, which is situated far back from the sea, on a receding part of the coast, whereas Tuddree Point is so prominent. My long experience of this coast shows me that a light is not cared for, except in bad weather, on this particular part of a coast so mountainous. I have felt my way by night in fine weather, as the tindals of pattimars do, by knowledge of the form and features of the land. Only in squally weather is a light an immediate necessity, and then Coomta is too far back to be of use: for in bad weather vessels must not keep in shore, but an offing must be maintained, whence the light would be scarcely visible.

Canara teak for Bombay Dockyard

Canal between Gungavelly and Tuddree

32. The Gungavelly is the river down which most of the teak timber for Bombay Dockyard is floated, it has a very poor entrance, and consequently pattimars have mostly to be loaded outside in the open sea, the timber being rafted out. These rafts frequently break adrift, and away goes the timber. If the small piece of canal to connect Gungavelly and Tuddree rivers be first executed, this timber could be taken on board in the quiet river of Tuddree, and much expense thus saved to the Government of Bombay, the Arbyle Ghaut would then be brought down, as it were, to an excellent seaport, and it would then relieve the Devamunny of a great deal of that superfluous traffic which, now incessantly plying upon it during October, November, and December, so severely cuts it up.

Works of primary importance.

33. To my mind, then, the works of primary importance for North Canara are:—

1st The Gungavelly and Tuddree Canal.

2dly. A wharf wall and a few small improvements at Cutgal.

3dly. Bringing the Neelcoond road on to the river above Oopenputnum, where also should be a wharf.

4thly. A wharf at the spot where the Arbyle Ghaut comes down upon the Gungavelly.

5thly. A small

5thly. A small lighthouse on Tuddree Hill.
6thly. Two buoys to mark Tuddree Bar.
7thly. The groin at the entrance of Tuddree River.

34. I have long been impressed with the utter inferiority of Coomta to Tuddree in every way, and have not failed to express my conviction of the same to the authorities of Canara.

Tuddree Harbour, better than the Coomta Roadstead

The natives say that the god or goddess of riches (I forget which) has taken up an abode at Coomta, but I think the first year's saving to them by adopting Tuddree would prove that their deity has also a country seat there; indeed, the famous temples of Gokurn are within half an hour's walk of Tuddree. A little was done for Coomta at first, trade gradually increased, and the cry was, "What more shall we do for the place's benefit?" Now people say, "It is getting on so well, we cannot neglect it even in favour of a better, something more must be done for Coomta," and thus is the original mistake perpetuated, instead of the inferior port being at an early stage of its existence superseded by the better one of Tuddree. I have not the least doubt that Tuddree Bar may be much improved by the means I have above recommended in para. 30, and at a very small sacrifice of money, at, indeed, one tithe of what is intended to be spent on the Coomta Canal, which work the very inhabitants of that place (for whose benefit the canal is said to be contemplated) deprecate as a waste of money without commensurate advantages.

Canal between Tuddree and Coomta not yet wanted.

35. This canal between Coomta and Tuddree has been, I understand, sanctioned, but it seems the general opinion of the natives that if any toll be levied on it, the old way of conveying goods to Coomta, as explained in para 29, will be maintained. That Coomta (a wretched little port from which the native craft fly on the approach of a gale to Tuddree) should ever have been allowed to supersede the latter fine port is greatly to be deprecated. A lighthouse has been built at Coomta, but not being on the proper site is not of any use in making the port from the north. The Devamunny and Neelcoond Ghauts are both interrupted by the Tuddree River, which seems to invite the traffic on to its stream to Tuddree, will then the native merchants, who are so knowing in money matters, carry their merchandise to Coomta to ship it in an open roadstead, when they can take it with less trouble, and no tolls to pay, to Tuddree, and there ship it from the pier that is about to be built at that place? The canal must be free to boats passing, otherwise it will not be used. For one-fourth the sum it is estimated to cost, we could make a lighthouse on Tuddree Point, and the Tuddree River accessible for nine months of the year to vessels of 600 tons. Doubtless, at some remoter period, when the Gairsipa Ghaut is opened, the canal may, in connexion with others connecting the Honore and Coomta rivers, be an adjunct to that ghaut, and form a part of the canal system of North Canara. That the system of canals along this northern Canara sea-board, cannot be extended lower than Honore without a great outlay, is shown by the fact that a range of hills 200 to 300 feet high, and in the lowest part not under 100 feet, projects into the sea, three miles south of Honore Ferry. Byndoor Head and several little capes intervening between it and Honore, projecting into the sea, throw obstacles also in the way.

Obstacle to canal system south of Honore

Object of deepening Tuddree entrance is to admit larger vessels to load by a pier

36. The object of deepening Tuddree River entrance is to enable vessels to get inside to load by a pier, which process is a great saving to merchants, but is not an absolute necessity; for Bombay, that much-vaunted harbour, has not yet that accommodation, although that they appreciate the advantage of a wharf is patent from the fact that Government have had estimates laid before them for the construction of wet docks, the least sum being 12¾ lacs, whilst one civil engineer proposes wharf walls in preference to wet docks, and states that 89¾ lacs of rupees would be required. The deepening of Tuddree River then may be looked upon as a work of secondary importance, more demanded by the interests of merchants than by those of Government, although, of course, every incentive to trade cannot but benefit the Government. I must not, however, omit to mention, that the groin proposed will prevent the ocean swell from cutting away the point outside of Mr. Brice's screwhouse, as it now does at the first burst of the south-west monsoon, which comes up well from the south but does not last many days, late in May or early in June. Thus will be gained that piece of ground (tinted yellow

Valuable land will be gained from the sea by the groin.

yellow on No. 5 plan) most valuable for a merchant's storehouse, as it has deep water close to its east side, where a pier can be made.

Advantages of Tuddree.

Disadvantages of Coomta.

37. I have in my hand a list of 24 vessels which were in Bombay harbour between May and October of last year, any one of which when loaded could have left Tuddree River as it now is. There are, besides, many that could load inside to a draught of 16 feet, and fill up with cargo outside. Any one of the vessels that frequent Cochin River could, with greater ease, enter and depart from Tuddree, where the bar is quite smooth during the fine season: the west point of land (on which I propose to place a light marked on the charts Nos. 1 and 5), so completely breaks the swell of the north-west winds, which are the only breezes that during the fine season last long enough to produce any swell that is troublesome to vessels on this coast. In these north-west winds Coomta is an open and exposed roadstead, and I have heard many complaints of the cotton and other goods getting wet alongside native crafts. I believe the merchants allow about two per cent. for the deterioration and loss of cotton in shipping and transit to Bombay from the coast.

Tuddree not open throughout the year, but made use of by native vessels in gales of wind.

Saving in loading from a pier or jetty.

38. Tuddree is the port to which the attention of merchants is now turned; two or three screws are now ready to press the cotton bales, and vessels of 300 or 400 tons will be able to load from a pier, and sail direct to England. Tuddree is, however, as I said before, merely a fair-season port; it is sealed from the middle of May till beginning of August, but for nine months of the year can be made the centre of a great trade, and is the next port north of Cochin wherein native craft seek shelter during gales of wind. In the cyclone which committed such havoc in Bombay on 1st November 1854, and which was felt all along the Malabar and Canara coasts, nearly 30 pattimars put into Tuddree for shelter; and at the early setting in of the monsoon of 1856 many took advantage of it likewise. It is well known that loading vessels from a wharf or jetty is far cheaper and more expeditious than the method pursued at Coomta, of loading by means of many small boats. The jetty constructed by Mr. Brice at Tuddree had, I am assured, in half a year, paid its cost by saving boat-hire. In the face of this fact, can it be expected that Coomta will continue to hold up its head before the rising importance of Tuddree, an open roadstead from which vessels have to fly on the appearance of a gale, before a safe and commodious harbour? Cotton will have to be landed at Tuddree, as it has to be pressed; but linseed and other seeds can be packed and weighed at Cutgal, placed in a boat, and sent directly alongside the merchant vessels, either in Tuddree River or outside: here, then, is another source of saving to the merchants.

Gain in shipping direct from the Coast

39. I am assured that the value of seeds exported from Coomta and Tuddree, in the official years of 1855 and 1856, was 40,000 rupees; whilst in 1856 to 1857 it was 80,000, and still increasing. I append a Memorandum given me by the firm of Brice & Co., to show what saving is effected by shipping cotton and seeds from Tuddree direct in English bottoms, instead of transporting it, as is now the custom, to Bombay, where it is shipped and the duty levied.

		Rs.	*a.*	*p.*
Cotton (American) value 100 rupees per Bombay candy of 7 cwt. - -	Freight to Bombay - - -	1	8	–
	Marine insurance - - -	–	12	–
	Extra landing in Bombay - -	–	12	–
	Bombay agent's commission -	1	–	–
	Interest of money for one month, at per cent. - - - -	–	12	–
		4	12	– p' candy.

(Nearly 5 per cent.) saving.

Linseed,

Loose
cut.

40. This
deterioratio
in native ves
to attract man
wanted to charte
the Persian war crea
to going there made by m
magistrate at Tuddree, and th
above suggested by me, Tud
the first of these difficulties w
by the publication of the coast
Goa territory, to Mount Dilly
together with one of Tudd

41. There is another
Canara; it is this
their own villages,
soon as possible,
during their progr
a reloading takes p
cheaper and quick
down upon the Gunga
Arbyle, and if the riv
proposed to join it with
so much less (some 20 miles)
were made navigable from Taree
to its mouth, there seems every probabil
either of those places to Gurrus, between
would be so many miles less of road (s
These are important points, and I propose
the season permits me to resume work.

42. I have already surveyed the Kalee Nuddy as high up as Malapore, be seen by the accompanying Chart, No. 4. which demonstrates that the navigation so far is excellent. There is said to be a small barrier some two or three miles above Malapore, but I fully expect it will fade into insignificance on a careful inspection. I shall endeavour to get through the survey of this river from Malapore to Barhull as quickly as possible, for I understand that the Kyga ghaut is to be proceeded with at once. Now, if the river be navigable, or may without difficulty be made navigable higher up than Kyga, it will clearly be a mistake to carry that ghaut so low down the river. The hurrying on of the Kyga ghaut will not accelerate the development of Sedashighur, for, until the harbour is formed, we cannot expect ships to go there. They may at once go to Tuddree in the fine season: indeed, I fully expect several will load there before the close of this year.

A
the
perhaps

Kyga ghaut.

43. I learn from Messrs. Brice & Co. that it would be absolutely necessary, in case of half the transit of goods from above ghaut to the coast being by land, and half by water, that merchants should have an office and warehouse at the place of shipment, goods having to be weighed and taken care of in shipping from carts to boats. Here, then, is another point we must not neglect, viz., that the locality for such offices be healthy. I shall bear this in mind during my examination of the rivers. Cutgal, on the Tuddree river, already adopted as a half-way house by

Halfway house between gh ts and the coast

er
im-
indian
eelcoond
road to
a few

ting the
ial port at
Tuddree
I have the
Northern,

ts mouth, or
passing by the
y improvement is
ing need be done to
ct the river with the great
I have before stated, in
, but to be overcome by
coast canal southward. The
ds with little capes projecting
back of these, but it has not
r south as I have surveyed,

ted just to the south
Islands, where rocks
so far as the to
oms of water. I
aid to be navigable
ds the Coolloor and
upon the river. Here,
ds are needed, entailing
ght at Coondapoor would
he whole coast of Canara is so
and Moolky rocks, on account of
n the shore.

lore, and to the south of the latter port to
coast canal, the backwaters running in
es parallel to the coast for several miles; few and short cuttings
are needed to perfect the system of water communication for hundreds
. The charts of Canara will give a tolerably good general idea of what is
ed for the country.

e River
ance.

48. I now proceed to lay before you a few remarks on Mangalore, showing what has been done and what suggested by others, and finally what is my own proposal for the improvement of that port at the least possible outlay; so that the river entrance may be permanently kept at one spot, and consequently be rendered deeper and more accessible. My first examination of the river entrance took place in April 1855. Copy of this was furnished to the civil engineer of Canara, who, during the monsoon of that year was engaged in operations contemplated to prevent the river mouth from moving up northward; these operations were unsuccessful. A second survey taken after that rainy season showed, that notwithstanding the impediment to the cutting action of the ocean swell and ebb tides when augmented by the freshes, that the laterite battery on the north side of the entrance was expected to afford, a strip of nearly 100 yards in breadth and 300 in length, including about two-thirds of the battery itself, was swept away. On the south side of the entrance, what was in April of that year a projecting point always above water, was, after the rains, a spit, which scarcely dried at low water; the main body of the point was removed from 200 to 300 yards to the south-west.

How the North Point has been cut away since the year 185

49. My

las
year
with
a dep
scou
river
Buntwa
that this
moving
opinion t
by a subs
or in a ge.
but a work
foundation t
unless protect
swept away by the

50 The ocean swell is
the sand is broken up by it
tides carry them away; sh
by stones, would protect the
no longer removed year by y
current to carry with it muc
revetment, as above desc
may l ad and discharge
shipping The who
groin, if allowed t
north-we f th
may be expecte
present survey s
only six feet; th
scale, and convinces
groin and by cutting
of time be undermined
the river mouth would ag

51 I would recommend that one
attempt be made, by stopping the pr
balance to that of Buntwal, in anticipat
if so brought down it will inevitably b
which now dries at low tide in the back
banks have been deposited by the dead water where the two fresh
a groin be built off the Custom-house towards the west some 20
greater force of the Buntwal stream will overpower that of Goorpoor, an
it a difficult task to prevent the latter from taking to its old outlet, the att
to close which will of itself be a difficult job. Abreast of this groin, if one
built, will be the river mouth, into which such a swell will roll that no boat could round the groin to pass from the Buntwal to the Goorpoor stream, without risk of being swamped, or carried out by the freshes and wrecked on the north shore A glance at the plan will show how the sand of the river mouth is deposited in patches (thus forming so many blind channels) when only one stream has its outlet there. If that of Goorpoor be led to the same mouth, I fear these banks will be even more spread about, and the result will be that we shall have no single deep channel, but the bar will be extended over an immense area. One of the agents (and by no means an inactive one) in the formation of the bar, must be the current that runs to the south along the coast in the south-west monsoon, and much of the peculiar direction the sand banks take must depend upon this, whether its action, that of the ebb, and of the south-west swell be synchronous or not.

52. I had, during the rains of 1855, an excellent opportunity of witnessing the effect of the monsoon swell at Sedashighur, and am convinced it is the latter rains only that we must depend on for scouring the bar; these happening in October,

ui

orks.

works of

d).

statute miles.

if required.)

ylor, Lieutenant I. N

C. S. Vessel "Pownah."

ed to Colonel A. T. Cotton for

ned) *H. Forbes,*
Acting Secretary to Government.

ige,
mber 1857.

No. 53.

From Colonel *A. T. Cotton*, Commandant of Engineers, to *H Forbes*, Esq., Acting Secretary to Government in the Department of Public Works, Fort St. George.

Sir, Commandant of Engineers' Office.

I HAVE the honour to transmit a Memorandum on the Harbour of Beitkul (Sedashighur), and the internal communications which I would propose in connexion with it

I am still receiving further information on the various points referred to in this paper, but I send it up now, in the assurance that my information is so far complete, that nothing further that can be learnt will essentially vitiate the projected system of works That the whole area of the basin of the Kistna, from Poonah to near Mangalore, can thus be completely laid open to foreign markets, besides being secured from famine while the monsoons continue, at a cost not exceeding one year's benefits, I have not the least doubt

I must repeat here one of my fundamental principles, viz , that water-carriage, and that alone, can carry the mass of produce at a remunerative rate of charge from the interior to the coast The charge by the Madras Railway is now 10 pice (1¾ *d*) per ton per mile, at which rate a ton of goods would cost 20 rupees to convey it from the centre of Bellary to the coast, a cost which would prevent a railway from touching the great traffic of the country It might convey 20,000 or 30,000 tons of cotton, indigo, &c , but the 500,000 or million of tons of grain, timber, stone, lime, fuel, &c., that ought to be moved, would, as now, be immovable; but a charge of 1 pie (⅛ *d*) per ton would reduce the cost to two rupees, at which almost any thing could be conveyed

The charge per ton on the Bombay Railway to cover the interest of the Bhore Ghaut Railway (80 lacs) would alone be two rupees, supposing that half the interest were paid by passengers, and that 100,000 tons per annum were carried (besides the cost of conveyance), a charge which would convey a ton at least 400 miles by water.

I beg to call particular attention to the coloured map which accompanies this. I think it calculated to be of use in showing at a glance the comparative importance of the different ports, and answer many questions, such, for instance, as why should a certain sum of money be spent upon a certain port rather than upon another, &c. &c.

The main question with respect to every port is, of what extent of country is it the natural outlet? Because upon the answer to this entirely depends the sum of money which it would be wise to spend upon it In the case of Madras the question is indeed settled, by its being the capital and the seat of government, as to what particular point of that coast should be improved as a port. but naturally a very large tract of country would be drained either to it or to some other point at no great distance.

I have, &c.
(signed) *A Cotton*,
Commandant of Engineers.

Fort St. George, 4 March 1858.

MEMORANDUM on the Harbour of *Beitkul* or *Sedashighur*, and the general Improvement of *Canara*, &c. by Public Works.

THE Right Honourable the Governor having sent orders to me at Bombay to meet him at Sedashighur, I proceeded there accordingly.

I may mention that when at Bombay I had the pleasure of meeting Mr. Bryce, a mercantile gentleman of remarkable energy and intelligence, who was engaged in trade in cotton and various articles, purchasing them over a great extent of country above the Western Ghauts, in the districts of Darwar, Canara, &c., and shipping them at the new port of Tuddree, where he has an establishment and is putting up cotton-screws. From this gentleman I received most valuable information respecting the produce, communications, &c., of those countries, which was a most opportune occurrence, as preparatory to the duty to which I was now called.

I should first point out that the question about the improvement of the harbour of Beitkul is necessarily so intimately connected with the state, produce, communications, &c, of the country surrounding it, that it is impossible to form any correct decision upon the former, without carefully inquiring into the latter.

What it may be advisable to do for any harbour must, of course, depend mainly upon the following points:—

1st. What is the extent of country of which it will naturally be the outlet, or of which, by artificial means, it may be made the outlet?

2d. What are the population, present productions, capabilities, &c, of those countries?

3d. What means of communication have they with the port, and what facilities for improving those communications?

Thus, the whole internal state of those countries and the system of public works required for their full development, is involved in the question of the port.

It is evident that whether that port is to be the outlet of a country occupied by half a million or by ten millions of inhabitants, whether that country is capable of producing valuable articles of export, and of consequently consuming extensively foreign articles, whether their present state is little short of what may be soon expected from them in the way of production, or whether by an extensive system of public works, their capacity for exporting and importing may be increased a hundred-fold, upon such points as these must depend, to what extent it may be advisable to incur expense in the improvement of the port; whether, in fact, it is to become a first-class or a minor port.

The naval points in the question are of course also essential, such as its accessibility, whether it can be used throughout the year, its advantages or disadvantages in comparison with other ports, &c.

As the engineer is so dependent upon the merchant for help with respect to the internal points, so he is upon the naval man with respect to these external ones; and just as I had the great advantage of very superior mercantile information, so I had also help in the naval points from a remarkably superior naval man, most intimately acquainted by long experience with the coast and the Arabian sea; this was Captain Taylor, of the Indian Navy, now employed on the Western Coast Survey.

As respects revenue questions, &c., I had also the equally great advantage of the society of Mr Bourdillon, Secretary to Government, so that I had certainly the help of three of the most intelligent men in India, in their own lines.

I may also mention that, by a remarkable coincidence, I had been of late turning my attention to the countries lying east of the Ghauts in that latitude, and had actually on paper a sketch of a project for a system of communication with irrigation in those very districts, the consideration of which had led me to look for the natural outlet of them.

Starting under these favourable circumstances, although I had never before been in those parts, I am in hopes that this paper may help in some degree towards a correct view of the subject

Let us first take a glance at the particular nature of the western coast of the peninsula, as respects its capabilities for exporting and importing.

The peculiar points seem to be these:—

1st. Its being cut off from the interior, throughout its whole length from Cape Comorin to the Nerbudda by the Western Ghauts, distant only from 10 to 40 miles, and varying in height from 2,000 to 8,000 feet.

It is clear that, in consequence of this feature, the natural outlets of the peninsula must in general be on the east coast.

2d. But there are three points where there are decided breaches in this barrier. The northernmost is where the rivers Nerbudda and Taptee, flowing from a considerable distance to the eastward, enter the sea near together. The centre at Sedashighur and near it, where three considerable rivers, the Kala Nuddee, Beidtee, and Gairsappa, break through; which rivers, though much shorter than the two former, yet flow from far eastward of the line of the Ghauts; and the southernmost, which is by far the most evident and complete breach, where the Poonany, which rises about 100 miles from the coast, breaks through.

3d. Almost throughout the whole of the remainder of the Ghauts they are a wall forming an effectual natural barrier to traffic, which, though it can be in a measure removed by artificial works, yet clearly shuts us up to these three points, as those on which only our labours can be wisely expended. Of course, natural obstacles can be to some extent overcome, but to attempt to work against nature, when we can have her help, is simply folly.

It is particularly to be observed that from the Taptee to Beitkul, the Ghauts are, especially near the coast, an unbroken wall, and Beitkul is the first place where there is any possibility of forming a really good communication with the interior.

4th. In this respect Bombay is most unhappily situated, having quite close behind it a perfect wall 1,800 feet high, the disadvantage of which no work can ever counteract, except in a very partial manner. This is demonstrated by the fact that 800,000 *l.* is now being spent in conveying a railway up them, and if we add to this ten lacs of interest during the five years that it is under construction, and 30 lacs paid for 30 miles that the railway is carried out of a direct line to get to the Ghaut, we have 120 lacs, the mere interest of which, on so large a traffic as 100,000 tons, and 100,000 passengers, would be per head and per ton three rupees, the cost of conveying a ton of goods 1,400 miles by sea, and probably 1,000 by good internal water communication, besides the cost of working the Ghaut and the other 30 miles This enormous sum of money being sunk, the interest of it must be paid, and thus must remain an irremediable and serious check to trade on that line, and it will be more and more felt as the interior is opened out by lines of navigation. Such is a specimen of what we must lose when we attempt to work against nature instead of with her.

5th. The level of the country which belongs to this coast is a very material point. So much depends upon the introduction of European energy and knowledge, and of bringing it to bear upon the native population, that whether the country has a temperature and climate which Europeans can enjoy or not, makes a very great difference

The country at the back of the Ghauts has this great advantage. Up the Nerbudda and the Taptee you must go some hundreds of miles from the coast to get on a high level; at Poonany, by going inland about 100 miles, you get upon the table land of Coimbatore, 1,300 feet above the sea, and where, consequently, for most of the year, there is a very fine temperature for Europeans, but from Sedashighur you soon get into a country from two to 3,000 feet above the sea, which in that latitude forms a climate for Europeans far superior to that of England, and where, consequently, there will undoubtedly be an extensive settlement of Europeans, if the country is thrown open to private undertakings by communication and irrigation.

In this respect the situation of Sedashighur is quite singular.

The Southern Mahratta Country and other districts offer a delightful abode for Europeans, and a field for European enterprise, if only produce can be conveyed to a port and shipped cheaply.

6th. The whole of these countries are highly fertile and well supplied with rain, and most of them are now occupied by a considerable population, so that labour is abundant.

7th. For produce. These countries are fitted to produce abundance of exportable articles; among them excellent cotton, coffee, oil-seeds, teak, &c.

8th. The peculiar point in respect of the accessibility of the coast to vessels, is, that during three months of the year the stormy south-west monsoon makes it difficult for a vessel to proceed on her voyage, thus giving an advantage to ports in proportion as they are further south, and so more windward, at least as far south as the 9° channel.

This is a material point, Poonany has an advantage over Beitkul, and Beitkul over Bombay in this way, and Cochin over them all. But there is nothing to prevent vessels coming into any of these ports or going out all the year round, though, of course, during the monsoon, the comparative easy accessibility of any one of them, and its freedom from neighbouring dangers, is a great advantage.

9th This coast has the advantage in being the nearest to Aden, and the mails for Madras and Calcutta ought undoubtedly to be landed at the end of the railway at Poonany, as soon as a good harbour is provided for vessels

10th. For shipments for China and the Eastern Islands, of course this coast is inferior to the east coast of the peninsula.

11th. It most materially affects this question that most of the rivers of the Kistna basin, the Toombuddra, the Kistna, the Beema, the Seena, &c, have a very moderate fall, from one to two feet per mile almost up to their sources, that is, to very near the Ghauts, so that the whole of them can easily be made effective navigations This is a most important fact, and is indeed one of the great leading features of this tract of country.

Probably 2,000 miles of internal navigation may thus be obtained at an insignificant price. Whenever a river has not a greater fall than two feet, it can certainly be made navigable at a small cost, and if it is not a very large river the expense will be quite insignificant.

Of the value of such a gift we may judge, when it is considered worth while to make railways to carry goods at ten times the cost of water transit, at 80,000 or 100,000 rupees a mile, so that 2,000 miles would cost from 16 to 20 millions sterling.

There is thus a vast amount of work done to our hands, and this system of internal communication requires only to have its defects corrected, and to be connected to a port by an artificial work, to throw open the whole country to foreign trade.

12th. So also with respect to the strip of country between the Ghauts and the sea. The whole way from Cape Comorin to Beitkul, there are great facilities for a canal along the coast, and I have ascertained that it can be carried into the harbour of Beitkul. It has already been cut in an imperfect way in some places, and in Travancore the whole traffic, both of goods and passengers, is carried along it, and a very moderate cost will make an excellent navigation the whole distance of 550 miles. This canal will thus connect the innumerable rivers which can all be navigated nearly to the Ghauts, so that the whole of these below Ghaut districts, will be completely supplied with a system of navigation connecting every village with the ports, and with each other. This is also a fundamental point, because it so affects all our treatment of the minor ports. Of course such a complete and cheap internal communication will tend greatly to concentrate the trade at the great ports, and thus save us from wasting our means upon a great number of petty places. North of Beitkul, all the way to Bombay, I am informed that the country is impracticable for a coast canal, but a late chief engineer of Bombay assured me that it was quite practicable to connect the Taptee and Nerbudda with Bombay Harbour by a canal, and thus give Bombay unbroken internal water communication with the basins of those rivers.

13th. With respect to the actual means of connexion of the ports with the interior, I have ascertained that there is no difficulty whatever in improving the navigation of the Poonany river, and carrying on a canal from it quite through the country to the east coast. At Beitkul the breaches in the Ghauts are not so complete as this. But I have ascertained that the Kala Nuddee is navigable, or easily improvable to 20 miles within the line of the Ghauts, overlapping the country practicable for a canal east of them, so that it will be only necessary to connect them by inclined planes capable of transferring loaded boats I have no doubt that this can be accomplished at a cost in interest and working expenses, which will form a very small charge in the traffic, so small as not materially to affect it.

14th. Since the very imperfect means of communication with the interior, of unmetalled, and in some cases unbridged Ghauts, or passes, have been opened, a vast and most rapidly increasing trade has sprung up at the imperfect ports of Tuddree and Coompta, in spite of an enormous cost of transit and the great expense of sending produce by sea to Bombay to be re-shipped there for foreign ports. The saving of these two items of expense would alone form an enormous profit on the trade in such produce. I would call particular attention to the very remarkable fact of all the three rivers, the Kala Nuddee, Beidtee, and Gairsappa, which here break through the Ghauts, falling nearly to the level of the sea, about 20 miles within the western line of the Ghauts. As I have said, they all flow for that distance through a deep and wide ravine, with the country on each side of them rising to one or 2,000 feet This is one of those innumerable cases in which difficulties vanish when they are looked for No person looking at the Ghauts from the coast could imagine that these rivers have not a fall of perhaps 50 feet a mile down to the point where they clear the line of the Ghauts. Instead of which the fall is so small, about two or three feet, that the rivers may easily be made available for 40 miles from the coast, and having given us access to that point it then becomes comparatively easy to connect their navigation with a canal in the upper country I examined the Kala Nuddee for some miles within the Ghauts and found that there was every circumstance that an engineer could desire to facilitate the completion of the navigation.

I cannot think of any other points that in a material degree will affect our conclusion on this subject.

They seem to be quite conclusive as to the following points, viz

1st. That there is a most remarkable concurrence of circumstances pointing to the position of Beitkul, as that where a first-rate port is eminently required
It is, indeed, the only point between the Taptee and Poonany, where there are natural facilities for communication with the interior.

2d It will have great advantages over Bombay, as being 250 miles to windward in the monsoon.

3d. If it were a thorougly safe and convenient port, and the communication with and in the interior, were improved, it must eventually become a first-class seat of trade

4th. We should, therefore, be prepared to carry out its improvement on a proportional scale, if it is in itself worthy of it.

To show clearly my ideas respecting these ports, I append to this paper a map of the peninsula, showing by different colours the tract of country of which each port in the peninsula seems to be the natural outlet, which will show their comparative importance. I also mark on another map the proposed lines of communication, the blue being the navigable rivers and the red the lines of canal. The black lines show the railways now under execution, so far as my information goes.

I now proceed to speak particularly of the natural advantages of Beitkul as a harbour, its capability of improvement, &c

Captain Taylor has furnished me with the accompanying most complete survey of this port, a single glance at which is sufficient to show its admirable fitness for being formed into a first-rate harbour.

It in fact affords, even in its present state, a most accessible and perfectly safe shelter for vessels, and the wonder is how such a place could have been so long treated with utter neglect. Much as I had heard of the neighbouring ports of Goa, Tuddree, Coompta, &c, I had never even heard that there was such a harbour as Beitkul

I must, of course, leave the proper nautical account of the harbour to nautical men, but I may venture to mention the leading points in it, after having had all my queries on nautical points answered by Captain Taylor on the spot.

1st. There is a large space with ample depth for ordinary merchant vessels now sheltered from the south-west monsoon.

2d. There is an inner cove with 15 feet and under, almost completely landlocked.

3d. There is partial shelter from the north-west gales (which are very heavy sometimes),

sometimes), by the two small islands lying off the mouth of the river. These islands must greatly break the sea that rolls into the harbour during those gales.

4th. The anchoring-ground is good.

5th. There is a cluster of islets outside, nearly enclosing an anchorage with seven fathoms, which might easily be made into a perfect shelter by a small extent of breakwater, if such an addition to the accommodations of the port should afterwards be considered necessary.

6th. A cut of two or three miles through flat ground will bring boats from the Sedashighur river (the Kala Nuddee) into the harbour, without their being exposed to the sea.

7th. A canal can also be cut through the low bund that closes the bottom of the cove and carried on along the coast, thus terminating the coast canal also in the harbour. This must, indeed, be effected by carrying a loose stone breakwater outside two headlands, for a length of about 1½ miles, but the water is not deep, material is at hand, and the expense will not be excessive.

8th Carwar Head, which forms the harbour, is a fine lofty headland and a good sea-mark, and will allow of a lighthouse being placed at a great height above the sea.

9th Ample materials are on the spot for any extent of breakwater at, I should think, a rupee a ton at the utmost.

10th. There is both flat and elevated ground for building to any extent.

11th. The cove has not filled up at all in the memory of man.

12th. This place is remarkable for being the coolest on the coast, owing, perhaps, to its being opposite to the opening in the ghauts.

13th. There is a hill 1,800 feet high, up to which a road with a slope of 1 in 12 might be made, making the distance four miles. This is a very important addition to the advantages of the place, opening the way for the residence of the families of the Europeans connected with the port, in a temperate climate, and affording an immediate relief to invalids.

14th. The place is most free of access in all weathers.

15th. The only danger is, the cluster of islets above-mentioned, the outermost of which is about 2½ miles off Carwar Head, but this is not a serious drawback, as they are high rocks, and a lighthouse may be placed on them.

16th. The harbour is capable of improvement literally to any extent, at a moderate cost. By carrying out a breakwater from Carwar Head, as shown in the plan, a most extensive anchorage may be sheltered, a great part of which will be just like a dock. If carried out 1,000 yards in 4½ fathoms, it will contain about half a million tons of stone, costing five lacs, but this may be done by degrees, as an increased extent of shelter is required. It would be quite sufficient to carry it on at the rate of a quarter of a lac of rupees a year. This shelter may be further improved by connecting the two islands off the mouth of the river, where the depth is at most 24 feet, this, as it might be very low, would take only about 40,000 tons, and cost 40,000 rupees, and a further addition might be made by carrying out a short breakwater almost south-west from the point of the outer island, at an expense of one lac. It is evident, then, that the harbour may be completely land-locked at a comparatively unimportant expense.

17th. By blasting the rock, and throwing it over into the sea from the inner end of the Carwar Head breakwater to the cove, and along the sides of the cove, a fine extent of wharf may be formed, on which warehouses may be built and alongside of which vessels may lie.

18th. One of the most remarkable things connected with this harbour is, that no river falls into it, so that it will have an advantage that scarcely any other harbour has, connexion with the interior by water without any of the evils arising from currents, silt, &c.; upon the whole I think we may safely say there is scarcely a harbour in the world that has a more remarkable collection of advantages than this would have considering—

1st. Its position both with respect to the sea and the country.
2d. Its security.
3d. Its accessibility by sea.
4th. Its improvability.
5th. Its climate.
6th. Its connexion with extensive internal water-communication.
7th. Its sanitarium on the neighbouring hill.
8th. Its freedom, so far as I can see, from any one drawback.

That such a harbour should be placed opposite such an opening in the ghauts, leading to such a country, and with such facilities for internal communication, is most remarkable, and it would seem to be madness to neglect so great advantages.

The works that I would propose to put in hand at first, in connexion with this harbour, are these:—

1st. The construction of a first-class lighthouse on Carwar Head A small one has been ordered, but I would urge that it would be a great pity to spend time and money on anything now that would not be in accordance with the other improvements, and which would consequently soon have to be altered.

2d. The cutting of the canal from the river to the harbour.

3d. The forming the canal from the harbour to the southward as far as the Tuddree river.

4th. The commencement of the breakwater from Carwar Head.

5th. The connexion of the two islands by a breakwater.

6th. Blasting the rock to form a roadway, wharf, &c., along the face of Carwar Head, near the cove.

7th The improvement of the navigation of the river up to 40 miles from the coast, and the connexion of the head of the navigation with the upper country by a temporary ghaut, which latter can be done at a very small expense, as the height is not great; I believe about 1,200 feet.

These seem to be the only works which should be at once commenced upon, a rough estimate of them is as follows:—

	Rs.
Canal from the Kala Nuddee	20,000
Ditto „ Tuddree	2,00,000
Carwar Head Breakwater (commencement)	50,000
Connexion of Islands	20,000
Forming road, &c., on Carwar Head	50,000
Improvement of the Kala Nuddee Ghaut	20,000
Total	5,10,000

I think if this sum were sanctioned in the first instance it would be sufficient; ultimately I would expend 4½ lacs more on the Carwar Head breakwater, and of course the further improvement of the harbour itself by the construction of wharves, &c., might be carried to any extent, and would depend upon the progress of the trade of the port.

I would next give a sketch of the system of internal public works that I would propose in connexion with this port.

First, in the upper country. I have remarked that the distinguishing feature of this tract is the moderate fall of most of the rivers, making them available for navigation. The grand object, therefore, is to form these several streams into a system of navigation by connecting them with each other, and with the two coasts by artificial water-lines.

It is from the confluence of the Kristnah with the Toombadra upstream that the former river and its branches have so moderate a fall. At the confluence the level is about 850 feet; and at Poona, the Mootamoola (a branch of the Beema) is on the level of 1,750 feet, a rise of 900 feet in 600 miles by the rivers, giving an average of only 1½ foot a mile, almost up to the Ghauts. The Kristnah also itself has a similar fall, but not so far to the westward. The fall of the Toombadra does not become moderate so far to the eastward, but from the confluence of the Wurdah with it (30 miles below Hurryhur), which is about 1,800 feet above the sea, so far as my information goes, there is a very moderate rise up to close to its source, but I am not certain on this point. The works, therefore, that seem to be required to complete this system of water-communication in this table-land, and to connect it with the ports, are these.—

Further information fully confirms this

1st. A canal from the Toombadra, near the mouth of the Wurdah, leading through the Bellary district* to the Kristnah, near the mouth of the Toombadra.

2nd. A canal from the above near Kurnool, carried over the open water-shed of the Kristnah and Koondaur (a level of about 1,200 feet above the sea), and down the open valley of the Koondaur to the Pennaar near Cuddapah; thence the Pennaar to be improved to the frontier of the Nellore district, and from that a canal to join the east coast canal at Kristnapatam. The whole of this line has been examined by Captain Collyer, Lieutenant Fisher, &c., and its practicability seems to be established, but there will be considerable difficulty in the Pennaar. These canals to irrigate a great extent of country.

3rd. A canal from the opposite bank of the Toombadra, to be carried north and west to meet a canal from the water-shed of the Beidtee Nullah These canals will also irrigate extensively. They will pass through the centre of the best cotton country in the Kristnah basin.

4th Extensive tanks to supply the irrigation from these canals when the river is low, and to keep up the navigation of the rivers in the dry season. These tanks are also absolutely necessary to preserve the great works in the Kristnah Delta from dangerous floods, and to supply that tract with summer-water.

I also find that a canal can easily be carried from Bangalore, to meet the main line at Bellary

5th. Numerous small branch canals (or light railways) to feed the various main lines above-mentioned, especially one from the Kristnah to the city of Hyderabad, a very important point to reach.

Thus the whole of this extensive table-land, forming western and southern Hyderabad, Bellary, Kurnool, the Southern Mahratta country, North Mysore, and Upper Canara, will be connected together, and with both coasts; and with extensive tracts of irrigation, and such a climate, it may surely be expected to become a very thriving country by God's blessing.

With respect to lower Canara I have already mentioned the coast canal to connect all the different rivers and ghauts. It is a most remarkable mistake that has been made on this coast, that with every possible facility for water-communications, and almost every possible hindrance to land ones, the attempt to form the latter should have been so long persisted in, in spite of complete failure, and in spite of the prodigious superiority of water-carriage actually proved in Travancore. To make a good land-communication along this coast, with its innumerable broad tidal rivers, is literally impossible, but to connect those rivers by canals is the simplest thing in the world. It is curious to observe how vain are the efforts of one mind when all others are obstinately wedded to a mistaken system. Mr. Conolly laboured for years to cut a few miles of one of these canals to connect the back-waters, and only effected it on a small scale, and by endless labour and innumerable manœuvres. But he did not effect any change of system. Latterly various efforts have been made to get one or two other cuts made, but nothing of any consequence has yet been effected, while probably the sums that have been wasted for 50 years in vain attempts to make a land-communication, would have made a complete steamboat-line the whole length of the coast, and have connected together hundreds of miles of river navigation. Now let us compare these two modes of dealing with this coast.

A COMMON ROAD.

1st. The cost of bridging such numbers of broad tidal rivers would make that out of the question.

2d. There are all the circumstances that make bridging difficult here; bad ground for foundation, deep water, ebb and flow of tide, severe floods from the interior, and heavy drift timber.

3d. Numberless broad ferries, however well managed, would render the communication always a very slow, inconvenient, and expensive one.

4th In the monsoon these rivers have strong currents, making the ferries particularly inconvenient.

5th. A great part of the distance the road passes along low, and swampy, or sandy tracts

6th. All the goods are brought from the interior of the low country by the rivers, so that they must be transferred from boat to land-carriages, in order to go on by the road

7th. At the least, the cost of transit by the road, in consequence of the endless interruptions, would be 20 times that by water

8th It would be much slower.

9th. The loss from injury by the water would be much greater.

10th. The road must be formed the whole length of the coast

Thus, everything is against the road.

For the Canal.

1st. About two-thirds of it is done to hand, many of the back-waters running for miles parallel to the coast.

2d. The first cost would be much less.

3d. There would be no transfers.

4th There would be no interruptions.

5th. By steamers, any speed could be used for passengers

6th. Goods and passengers would be embarked at any point up the rivers, conveyed by them and the canal, and up other rivers, and be landed at any point without transfer.

7th. Produce of any kind could be transferred from any part of the low country, or from any of the ghauts leading to the interior to any other part of the coast, which they could not be at all by the best road, as it would be too expensive.

8th. During the monsoon, the coast being shut up, all traffic up and down the coast is effectually stopped, but by the canal it would be carried on in the monsoon, as well as in other weather

I call attention to this, because it is one of those things that shows how inveterate the prejudice has been against water-communications Men here were not blinded by the established prejudices which a complete ignorance of the principles of transit has allowed to grow up in favour of railways, and yet in the face of utter failure in the attempt to establish a road, and of complete success in the canal where it has been tried, as in Travancore, the former has been persisted in for years. When an engineer urged the cutting of one of the links of this line, he was told to attend to his proper duties; and even when a collector attempted to cut one, he had to use his own personal influence in all sorts of ways, and it was only after years of labour that he got one short line executed, and that very imperfectly And yet every day men were experiencing the difference between the attempted land-communication and the canal. They made their way down through Malabar, meeting with incessant interruptions, difficulties, and delays, and at a great expense, but on reaching Travancore they jumped into a boat with delight, feeling that all their trouble was over, performing the rest of their journey south, with fair speed, with perfect convenience, and at an insignificant cost.

This case puts in a strong light the difficulties which have to be encountered, in introducing water-communications in the face of such determined prejudice.

If a man proposes to lay out 5,000 rupees on a mile of common road to convey goods at 1 *d.* or 2 *d.* a ton, or 100,000 rupees on a mile of railway to convey goods at from 1 *d.* to 4 *d.*, and passengers at from ½ *d.* to 2 ¼ *d.*, he is a sensible, judicious man, but if he proposes to establish a water-communication at from 500 to 5,000 rupees a mile, to carry both goods and passengers at $\frac{1}{8}$ *d.* per ton and per head, he is a wild theorist, and told to attend to his proper duties. I should say, has been, for certainly a beginning has been made of a complete change in public opinion on this point. There is, however, abundance of prejudice to be encountered still, and a great deal of what remains is unhappily of the most inveterate kind of all, that is, the prejudice which is based upon men's own acts, who have committed themselves to the wrong course, and who consequently, in mere desperation, try to shut their eyes to the truth to the last possible moment.

In Wales, goods are taken from the side of the railway at the Menai Straits and carried 750 miles round, doubling the Land's End, and encountering all the risks and delays of a coasting voyage in those stormy latitudes, and the expenses of the port of London, where they might go by the rail, a distance of only 250 miles, one-third of that by sea, because they can be carried cheaper; and nothing but an opportunity of seeing a similar case in India will fully open the eyes of the public to the real facts of this question.

With respect to the connexion of the southern ports of Canara with the interior I would say:

1st. Of course if a perfect main line of communication is made in the upper country, terminating in the Kala Nuddee, the plan should be to connect as much of that tract as possible with such main line, and then the question of the minor ghauts, like that of the minor ports, becomes one of much less consequence.

2d. When on the coast I went up one of the ghauts and down another, that I might see what the the nature of the difficulties is, and my conclusion is clearly that what is wanted for these minor passes, is light rails following the windings of an ordinary road.

Such a work could be executed much cheaper than a wide common ghaut, and as by far the greatest traffic is downwards, they could be worked very cheaply, only requiring one or two men to each train, with powerful breaks to let them down, and cattle to take back the nearly empty waggons.

I have lately made an experiment with $\frac{3}{4}$ inch bars welded together throughout, so as to have no joints, and worked with waggons with double flanches, and with the tires of the wheels sloped so as to allow of the waggon running round a very sharp curve freely.

These bars welded into one piece were merely laid on rubble work, without any fastenings whatever, and appeared to answer perfectly for slow traffic.

Such lines, with a gauge of two feet, which is sufficient for one ton loads, would require the most insignificant cutting, and with the timber which abounds there for longitudinal sleepers, and for bridges, would probably not cost more than 3,000 rupees a mile, so that to ascend 2,000 feet at one in 25 would take 10 miles, and cost 30,000 rupees. A few such ghauts just for the conveyance of the produce of the small tract of country near them, that would not be carried to the main line, would be of use, but the traffic on them would not be great.

About four such passes would be sufficient for Canara.

Thus my conclusions on this subject are these:

1st. That everything coincides to point out Beitkul as the site of a first class port, and that both with reference to lower Canara and the whole upper part of the basin of the Kistnah, our main attention, labour, and money should be given to the establishment of that harbour.

2d. That a first class water-communication should be made in the upper country, terminating in the same.

3d. That a coast canal should be carried along the whole length of Canara and Malabar, also terminating in it.

4th. That about four minor ghauts should be laid with rails in Canara.

5th. That the system of water transit in the upper country should also be connected with the east coast.

By these means, I have no doubt that produce may be conveyed to either coast from the whole of this tract at from 1 to 3 rupees a ton, that is, at

1 pie ($\frac{1}{8}$ d.) a mile, and passengers at from 1 to 6 rupees, that is at from 1 pie ($\frac{1}{8}$ d.) to 6 pice ($\frac{3}{4}$ d.) per mile. And if Beitkul is fully improved, I believe it will be as cheap a place of shipment as any in the world, and certainly much cheaper than any port in India at present, so that it will have the advantage over Bombay as it is now, and as it will be with its railway, for shipment of the produce of the upper country, by from 5 to 10 rupees a ton, much more than would constitute a good profit. If only 100,000 tons were shipped here per annum it would thus yield a profit, above what it would if shipped at Bombay, of about 7 lacs a year.

I give a rough estimate of the supposed cost of the works that I would propose in connexion with this port.

	Lacs.
Improvement of 2,000 miles of river navigation at 1,000 rupees a mile - - - - - - - - -	20
Canal from the Kala Nuddee to the Toombuddra, 120 miles at 30,000 rupees - - - - - - -	36
Canara Coast Canal, 180 miles at 6,000 rupees - -	11
Four ghauts - - - - - - - - - -	1
Detail works connected with irrigation of half million acres at 6 rupees per acre - - - - - - -	30
Works at Beitkul before enumerated - - - - -	5
TOTAL - - -	103
	Or, £ 1,000,000

This is besides the canal and irrigation to the eastward of the Toombuddra. I merely give this to show in a general way the scale upon which I think these improvements should be carried out.

That in this way in five or ten years, with God's blessing, this whole tract of country inhabited by about ten millions of people, would be brought into an entirely new state, I am fully assured.

As respects the people, the change would be just the same as we see in this district of Rajahmundry, where there is now full employment for all at about 50 per cent. higher wages than there was before, so that the relief to the mass of the people is really complete, and the change here is as great in all other respects. This year about 27 lacs of revenue were collected with perfect ease, 40 per cent. more than the average before the works, paid with great difficulty. The traffic on the main canals in the past year was 13,000 boats, averaging about ten tons each, besides rafts, in all about 150,000 tons, against 1,000 boats averaging about five tons, or with rafts, perhaps in all a traffic of 10,000 tons six years ago.

Exports and imports to the value of 25* lacs against an average of 10 lacs, of which 2½ lacs was imported grain, the latter showing not the wealth but the poverty of the district at that time. Lastly, a large import of bullion instead of a constant export.

The land to which water is now led, is about seven lacs of acres, and as a water-rate is now being levied of from two to four rupees per acre, and they are allowed the water free for two years, in the third year from this time, about 20 lacs of direct additional revenue will be levied in this one delta, one-fifth of the whole deficiency in the finances of India. This is, besides increase of cultivation, which is very extensive, an increase of extra revenue from the improved condition of the people.

The extension of this irrigation is going on rapidly, and the same in the delta of the Kistnah, so that we have ample grounds for concluding that these two deltas will within a few years yield an increase of revenue equal to the whole present deficiency in the finances, of one million. Again, by many different sources of information, we find that the increase of produce in these irrigated lands is certainly above 15 rupees an acre over the former produce in one-crop land, so that in these seven lacs of acres there will be an increased value of produce of 100 lacs, or one million sterling, besides a second crop on 200,000 or 300,000 acres.

---

* Now (1858) increased to 35 lacs.

Does it not seem strange that the question should still be asked, in a despairing tone, what can be done to correct the finances? If it is asked, but if there is so much land watered in Rajahmundry now, how is it that the revenue has not increased still more rapidly (the works having been begun in 1845)? The answer is simply, because the revenue officers would not collect it. There are literally thousands of acres of land that have yet paid no water rate, that have had the water for 11 years, and several hundred thousands that have had it from one to five years.

It is only now, that in consequence of peremptory orders from Government, the water rate is being regularly levied, but in the meantime at least half a million pounds sterling of revenue has been lost through the grievous neglect or obstinacy of those whose duty it was to collect it. But still, notwithstanding this extraordinary hindrance, there has been collected since the works were commenced in 1845, about 60 lacs in this delta, more than there would have been in the average of former years, and that, not only without any increased burthen to the people, but with a relief equal in amount to much more than the whole former revenue.

The total cost of these improvements, up to the end of last working season, was about 30 lacs.

It is highly important that these results should be mentioned in every paper, recommending improvements of a similar nature for other parts of India, to show that we are not now dealing in theory, but have unmistakable grounds for concluding that these are really the public works that India wants.

It must be observed that this delta has a secure port.

(signed) *A. Cotton*, Colonel,
Madras, 3 March 1858. Commandant of Engineers.

(No. 1012.)

(Public Works Department.)

EXTRACT from the Minutes of Consultation, under date the 28th May 1858.

READ the following letter from Colonel A. T. Cotton, Commandant of Engineers.

Transmitting a memorandum on the Harbour of Beitkul (Sedashighur) and the internal communications in connexion with it.

(Here enter 4th March 1858, No. 53.)

Para. 1. With this letter, Colonel A. T. Cotton lays before Government a memorandum on the harbour of Beitkul in Sedashighur bay, and the internal communications connected with it.

Consultation, 18th August 1857, Nos. 6–17.

Consultation 12th March 1858, Nos 128, 129.

2. This paper has been drawn up in reference to the order of the 14th August 1857, in which the Government desired Colonel Cotton to take the whole subject of the Sedashighur harbour works into his deliberate consideration, and to place his opinion upon all points connected with it before them. Since then the matter has engaged attention in England, as it is seen that an association, formed expressly for the object of promoting measures for facilitating the importation of Indian cotton, has adverted to the formation of Sedashighur harbour, and the opening of roads into the interior, as one of the means by which that object would be attained. Colonel Cotton's report therefore is opportune, and its importance cannot be over estimated. The Government are anxious that the matter should be well deliberated upon, and for this purpose they resolve to order that Colonel Cotton's report, together with those which preceded it from Lieutenant Taylor, of the Indian Navy, be printed, and that 300 copies be struck off and distributed to the engineer officers; and further, that the chief engineer be requested to prepare plans and estimates for the works required at Beitkul, and submit them to Government.

From Lieutenant A. D. Taylor, I. N. 13th September 1855.

From Lieutenant A. D. Taylor, I. N. 27th July 1857.

From Colonel A. T. Cotton, 4th March 1858.

3. As the map forwarded by Colonel Cotton should be attached to the printed report, the Government resolve to transmit it to the Chief Engineer, in order that copies may be prepared for that purpose.

4. Copies of the compilation now ordered will be forwarded to the Honourable Court of Directors and the Government of India, in continuation of the letters noted in the margin.

To Honourable Court of Directors, 16th April 1856, No. 9.
To Government of India, 11th March 1858, No. 435

(A true extract.)

India Office,
14 April 1859.

(signed) *W. H. Bayley,*
Acting Secretary to Government.

(True copies.)

(signed) W T. Thornton,
Secretary, Public Works Department.

— No. 4. —

REPORTS on the Direct and Indirect Effects of the GODAVERY and KISTNAH ANNICUTS, in *Rajahmundry, Masulipatam, Guntoor,* &c., and the COLEROON ANNICUTS, in *Tanjore* and *South Arcot.*

(No. 493.)

(Revenue Department.)

EXTRACT Minutes Consultation, dated 29 May 1852.

Resolved, THAT the Board in the Revenue Department be requested to call upon the Collector of Rajahmundry for a statement, affording information upon the following points connected with the lands irrigated by the Godavery :

1. Extent of irrigated land watered by the Godavery for the five years prior to the construction of the annicut, the annual revenue derived therefrom, and the cost of channels or works for maintaining this irrigation.

2. The maximum extent of land in the most favourable years, irrigated during the last 20 years by the waters of the Godavery, prior to the construction of the annicut, and the revenue derived therefrom. (An estimate, where the land was zemindary and the collector has not the accounts, will suffice.)

3. The whole extent of land now irrigable (in 1851) by the Godavery with its annicut or otherwise, the amount of revenue derived therefrom, the annual increased extent of land irrigated each year since the annicut was brought into use, with the increase of annual revenue therefrom.

4. The quantity of the newly irrigated land under cane or other not ordinary produce, and the quantity of the same land under paddy or ordinary grains,

5. The prices of rice, cholum, &c., during the five years prior to the construction of the annicut, and the prices of the same articles during the subsequent years.

(True extract.)

(signed) *H. C. Montgomery,*
Chief Secretary.

(No. 498.)

(Revenue Department).

EXTRACT from the Proceedings of the Board of Revenue, dated 23 October 1854.

In Consultation, 11th September 1854.

READ again letter from the Sub-Collector in charge of Rajahmundry, dated 29th July 1854, transmitting a statement relative to the lands irrigated by the Godavery.

(Here enter No. 52.)

In Consultation, 23 October 1854.

Read also letter from the Sub-Collector in charge of Rajahmundry, dated 23d September 1854, furnishing reports on the effects of the Godavery annicut upon the general circumstances of the district.

(Here enter No. 90.)

Para. 1. Resolved that the above letters, with their enclosures, be submitted for the information of Government, with reference to Extract Minutes Consultation dated 29th May 1852.

2. In pursuance of the instructions of Government, the Board called upon the Sub-Collector in charge of Rajahmundry to furnish the information required upon certain points connected with the lands irrigated by the Godavery annicut.

3. In the first of the above letters that officer submitted a statement showing the irrigated extent of the whole district both above and below the annicut, the revenue derived from and the area of the lands under cultivation in the irrigated villages of the Bicavole and Caupavaram talooks only, both before and after the construction of the Tooliabaga and Samulcottah channels.

4. The Board, considering the information contained in this statement to be insufficient, requested the Sub-Collector to furnish a more detailed report on the subject.

5 Upon this requisition the Sub-Collector, in the second of the above letters, submits two elaborate reports on the effects of the several works of the annicut upon the revenues of the Talooks of the subdivision and the principal division, the former being a copy of a communication to the Civil Engineer whilst Mr Taylor was Sub-Collector, and the latter a statement drawn up whilst Acting Collector.

(A true extract).

(signed) *B Cunliffe*,
Sub-Secretary in Charge.

(No 1592.)

(Revenue Department).

EXTRACT from the Minutes of Consultation under date the 7th December 1854.

READ the following Extract from the Proceedings of the Board of Revenue

(Here enter 23d October 1854, No. 498.)

The report of the effects of the Godavery works upon the district of Rajahmundry accompanying the foregoing letter, has been laid before Government without any opinion from the Board of Revenue. The Right Honourable the Governor in Council is desirous that the statements submitted by the Sub-Collector of Rajahmundry should be carefully tested by the Board, and that from them abstract statements should be prepared exhibiting the results in a clear and concise form. The Government take this opportunity of forwarding to the Board statements which have been received from the Collector of Tanjore, as also a memorandum with statement from Mr. Stokes, Collector of Guntoor, on the subject of the advantages derived from the annicuts in those districts. The Governor in Council proposes to publish all these reports for general information, and is therefore very desirous that they should exhibit, with the strictest accuracy possible, the utmost impartiality in the results of the outlay on the important works under notice. The Board are aware that the correctness of the accounts given by Colonel Cotton in his publication have been impugned, and other writers have argued that the large returns anticipated from the outlay on these works, have not been or cannot be realised It is with a view of clearing up all doubts on this subject, so far as it is possible, that the Government have called for these reports, and it is therefore of the utmost importance that their accuracy should be rigidly tested by the Board both in the Revenue and Public Works Departments. The Board will give their earnest and early attention to the subject, and lay before Government their opinion.

2. Referring to the views which have been advanced in a recent printed pamphlet entitled "Modern Hydraulic Works in Tanjore and Rajahmundry Examined," the Government would further wish that before submitting their report, the Board will communicate to the author of those remarks, their views

and the result of their examination, for any further observations he may have to offer.

3. The Board should also obtain from the Collector of Masulipatam a statement of the effects of the Kistnah annicut on that district, as it will be observed that Mr Stokes' memorandum and statements refer solely to Guntoor.

(A true extract.)
(signed) *H. C. Montgomery*,
Chief Secretary.

(No. 822.)

(Revenue Department.)

Extract from the Proceedings of the Board of Revenue, dated 2 April 1855.

Read Extract from Minutes of Consultation, dated 7 December 1854.

(Here enter No. 1592.

The Board are anxious to give the subject here brought before them the attention and close scrutiny which its great importance demands, but Government are aware that the districts benefited by the Godavery and Kistnah annicuts have been, for the last five years, under the separate control of the Commissioner for the Northern Circars; although, therefore, the Board can show from the records of their office the general revenues of those districts from the commencement of our rule to the present time, they find that they do not possess that detailed and connected information as to the progress and condition of the districts during the past five years, which is requisite for the full consideration of the subject under review.

2 The subsidiary works connected with these annicuts are still incomplete, and arrangements have yet to be made for remodelling the land assessment, or introducing a water-tax on, the lands newly brought under irrigation. Returns of the revenue hitherto collected would not, therefore, be a fair standard by which alone to judge these annicuts, and Lieutenant Colonel Cotton evidently includes in his estimation of their value the additional revenue which they may be expected to bring to Government, when the irrigating channels are completed and the assessment has been revised upon the lands which are converted by them from dry to wet cultivation.

3. The Board, therefore, think, that besides an account of the revenue previous to and after the construction of these works, information should be laid before Government, showing the time when their full benefit is likely to be felt, and the amount of the additional revenue which may hereafter be expected from them. The Board have necessarily only imperfect information regarding the circumstances which have delayed the remodelment of the assessment, and the taxation which it is expedient to place upon the newly irrigated lands; they have also no opportunity of testing by personal inquiries the opinions of the local officers on this point, or of observing the effects which the annicuts already show upon the people, by brightening their prospects and stimulating their commercial and manufacturing as well as agricultural industry.

4. They therefore request permission to transfer the papers regarding these two annicuts to the Commissioner for the Northern Circars, whose means of collecting accurate local information on all branches of the subject are so much superior. As the Commissioner is a member of the Board, this step might perhaps have been taken without requesting special permission, but the importance of the subject has led the Board to explain the grounds on which the proposal is made, and request the authority of Government for its adoption.

5. The Board are engaged in scrutinising the details of the Coleroon annicuts, and hope to submit their report on them at an early period.

(True extract.)
(signed) *B. Cunliffe*, Secretary.

(No. 423.)

(Revenue Department.)

EXTRACT from the Minutes of Consultation, under date 14 April 1855.

READ the following Extract from the Proceedings of the Board of Revenue.

(Here enter 2 April 1855, No 822)

In forwarding to the Board of Revenue, in view to their accuracy being tested, the statements and memorandums received from the Collectors of Tanjore and Guntoor regarding the advantages derived from the annicuts in those districts, the Government commended them to the Board's "earnest and early attention," and they are now disappointed to find that as regards the districts in the Northern Circars at least, the consideration of those statements has yet to begin The Board are requested to return the papers connected with the Godavery and Kistnah works to Government, and to submit their reply on the Coleroon annicuts at their earliest convenience.

(True extract.)

(signed) *J D Bourdillon,*
Secretary to Government

(No 914)

From *B. Cunliffe*, Esq., Secretary to the Board of Revenue, to *T Pycroft* Esq., Chief Secretary to Government

Revenue Board Office, Fort St George,
19 April 1855

Sir,

WITH reference to Extract from Minutes of Consultation dated 14 April 1855, I am directed by the Board of Revenue to return herewith the papers connected with the Godavery and Kistnah works, called for therein.

From Rajahmundry, 29th July, in consultation, 11th September 1854.

From ditto, 23d September, in consultation 2d October 1854 Memo from Mr Stokes, with one accompaniment on the Guntoor and Kistnah annicuts

2 The Board regret that delay should have occurred in furnishing the information called for regarding these works, but Government are aware how the Board have been lately situated, and the subject sent for their scrutiny and opinion is of an extensive and difficult nature, and they found that the records of their office did not contain materials for its full investigation

I have, &c
(signed) *B. Cunliffe,*
Secretary

Revenue Board Office, Fort St. George,
19 April 1855.

(No. 52.)

From *G. N. Taylor*, Esq, Sub-Collector in charge of Rajahmundry, to *W H. Bayley*, Esq, Secretary to the Board of Revenue, Fort St. George

Sir,

Rajahmundry District, Cocanada, 29 July 1854.

Para. 1. I HAVE the honour to forward a statement exhibiting the information called for in the Extract from the Minutes of Consultation dated 29 May 1852, No. 493, received with the Board's proceedings of the 10th June following, relative to the lands irrigated by the Godavery.

2. The lands under the Toohabaga and Samulcottah channels alone are included in this statement. The other channels were incomplete, and their influence was not felt till Fusly 1261. Previously to that year, no lands underwent the change from dry to wet or from wet to garden cultivation.

3. There are no accounts exhibiting the extent of irrigated land, the statement therefore contains the whole area of the cultivated lands of the irrigated villages for the five years preceding the commencement of the construction of the annicut, with the revenue derived therefrom and the cost of the channels.

4. It is impossible to estimate the extent of land formerly irrigated, because no accounts are in existence; but the Bickavole mootah properly so called, consisting of 30 villages, which now yield an assessment of *Rs.* 88,345. 7. 10. appears to have 'formerly paid to the zemindar, *Rs.* 64,949. 6. 8.

	C. Rs. a. p.
Demand of Fusly 1251 (A. D. 1841-42) - -	64,949 6 8
Collection - -	45,444 7 0

5. The statement now forwarded, and the foregoing paragraphs in explanation of its contents, were prepared and drafted by Mr Prendergast before his departure from the district. I understand that it was his intention that the statement should be transmitted in its present form, but I fear that it conveys very little information which will be useful at the present time to enable the Board to judge of the value of the annicut.

6. The account does not profess to give the whole returns from the Thooliabaga and Samulcottah channels. It exhibits merely the revenue derived from the wet lands in a few villages of the talooks of Bickavole and Capaveram before and after the construction of the annicut; and this information, it appears to me, can be more simply exhibited in the following abstract Table:—

STATEMENT showing the Extent and Shist of Wet Land in the *Bickavole* and *Capaveram* Talooks, both before and after the Construction of the Annicut.

A. D.	Fusties	Irrigated Land		Comparison with preceding Fusly				Cost of Maramut Works	Price per Madras Garce	Remarks.
		Extent in Potties of 8 acres	Shist.	Increase		Decrease.				
				Land.	Shist	Land.	Shist.			
.1	2	3.	4.	5.	6	7.	8	9.	10	11
			Rs.	*P.*	*Rs.*	*P.*	*Rs.*		*Rs.*	
1842-43	1252	1,896	58,443	–	- -	–	–	- -	57.	
43-44	53	1,818	56,871	–	- -	78	1,572	- -	53	
44-45	54	1,744	52,717	–	- -	74	4,154	- -	58	
45-46	55	1,612	41,624	–	- -	132	1,193	21,381	85	The Maramut works entered in column 9, consist entirely of earth and masonry work, to the Samulcottah and Tooliabaga channels.
46-47	56	1,648	49,652	36	8,028	–	–	15,697	85	
47-48	57	1,858	55,108	210	5,456	–	–	14,326	78	
48-49	58	2,172	68,509	314	13,401	–	–	17,641	71	
49-50	59	2,335	75,777	163	7,268	–	–	8,448	67	
50-51	60	2,488	82,601	153	6,824	–	–	27,258	63	
51-52	61	2,528	86,182	40	3,581	–	–	22,683	58	
52-53	62	3,203	106,292	675	20,110	–	–	19,540	57	
53-54	63	3,638	117,935	435	11,643	–	–	56,616	99	
		26,940	851,711	2,026	76,311	284	6,919	203,590		

7. It will be seen, therefore, from the above statement, that both the extent and shist of the land irrigated in fusly 1263, are double the extent and shist of the whole cultivated land of those villages in fusly 1256, the year prior to the commencement of the annicut. The net increase of revenue for the whole period of 12 years is about 70,000 rupees, which at the rate of five per cent. per annum, is equivalent to the interest on 175,000 for eight years. The capital expended on the two channels, from which these lands are irrigated having been 203,590. But how much of this expenditure ought fairly to be debited to those talooks, I have no means of knowing, and as an account of profit and loss, this return is therefore of little value.

I have, &c.
(signed) *G. N. Taylor,*
Sub-Collector in Charge.

STATEMENT showing the LANDS under the THOOLIABAGA and SAMULCOTTAH CHANNELS and their CIST, as well as other Particulars called for in the Extract from the Minutes of Consultation, dated 29th May, received with the Board's Proceedings of the 10th June 1852

Numbers.	NAMES of the TALOOKS	Numbers.	NAMES of CHANNELS	Extent of the whole Area of the Cultivated Lands of the Irrigated Villages by the Godavery, for the Five Years prior to the Construction of the Annicut, the Annual Revenue derived therefrom, and the Cost of Channels or Works for maintaining this Irrigation.					
				FUSLY 1255.		FUSLY 1256.		FUSLY 1257	
				Land.	Cist.	Land	Cist.	Land.	Cist.
	1.	2.	3.	4.	5.	6.	7.	8.	9.
				P t m.	*Rs. a. p.*	*P. t m*	*Rs. a. p.*	*P. t. m.*	*Rs. a p*
1	Bickavolo Talook - -	1	Thooliabaga Channel -	1,088 4 $6\frac{5}{16}$	25,157 3 1	962 4 $8\frac{7\frac{1}{2}}{16}$	28,596 4 1	1,134 8 $0\frac{3}{4}$	31,437 12 6
		2	Samulcottah Channel -	240 19 $15\frac{3}{4}$	6,092 2 6	403 1 12	13,199 2 5	465 0 $9\frac{3}{4}$	15,446 12 4
				1,329 4 $6\frac{1}{16}$	31,249 5 7	1,365 6 $4\frac{7\frac{1}{2}}{16}$	41,795 6 6	1,599 8 $10\frac{1}{2}$	46,884 8 10
2	Capaveram Talook - -	1	Samulcottah Channel -	283 11 $15\frac{8\frac{1}{2}}{16}$	10,375 4 10	283 11 $15\frac{8\frac{1}{2}}{16}$	7,857 2 5	259 19 $10\frac{6}{16}$	8,224 6 6
			TOTAL - - -	1,612 16 $5\frac{9\frac{1}{2}}{16}$	41,624 10 5	1,648 18 4	49,652 8 11	1,858 8 $4\frac{1\frac{1}{4}}{16}$	55,108 15 4
			Particulars						
		1	Thooliabaga Channel -	1,088 4 $6\frac{5}{16}$	25,157 3 1	962 4 $8\frac{7\frac{1}{2}}{16}$	28,596 4 1	1,134 8 $0\frac{3}{4}$	31,437 12 6
		2	Samulcottah Channel -	524 11 $15\frac{4\frac{1}{2}}{16}$	16,467 7 4	686 13 $11\frac{8\frac{1}{2}}{16}$	21,056 4 10	724 0 $4\frac{9}{16}$	23,671 2 10
			TOTAL - - -	1,612 16 $5\frac{9\frac{1}{2}}{16}$	41,624 10 5	1,648 18 4	49,652 8 11	1,858 8 $4\frac{1\frac{1}{4}}{16}$	55,108 15 4

STATEMENT showing the Lands under the Thooliabagaand Samulcottah Channels, and their Cist, &c —*continued.*

Numbers	NAMES of CHANNELS	Extent of the whole Area of the Cultivated Lands of the Irrigated Villages by the Godavery, for Five Years prior to the Construction of the Annicut, the Annual Revenue derived therefrom, and the Cost of Channels or Works for maintaining this Irrigation								
		FUSLY 1258.		FUSLY 1259.		TOTAL.		AVERAGE.		Cost of Channels from the Year 1846 to 1850.
		Land	Cist.	Land	Cist.	Land.	Cist	Land	Cist	
		10.	11.	12.	13.	14.	15.	16.	17.	18
		P t m.	*Rs a p*	*P. t. m*	*Rs. a p.*	*P t. m.*	*Rs. a p.*	*P. t. m.*	*Rs. a. p*	*Rs. a. p*
1	Thooliabaga Channel -	1,342 7 4 1/16	37,906 7 9	1,400 2 4 2/16	39,314 5 11	5,927 6 7 11/16 ½	1,62,412 1 4	1,185 9 4½	32,482 6 9	—
2	Samulcottah Channel -	568 12 0	20,355 1 6	677 3 3¾	24,398 1 4¾	2,354 17 9¼	79,491 4 1¾	470 19 8¼	15,898 4 -	—
		1,910 19 4 1/16	58,261 9 3	2,077 5 7 14/16	63,712 7 3¾	8,282 4 0 15/16 ½	2,41,903 5 5¾	1,656 8 12¾	48,380 10 9	—
1	Samulcottah Channel -	261 17 14 6/16	10,248 2 8	257 17 9	12,065 5 3	1,345 19 0 13/16	48,770 5 8	269 3 13	9,754 1 1½	—
	TOTAL - - -	2,172 17 2 7/16	68,509 11 11	2,335 3 0 14/16	75,777 12 6¾	9,628 3 1 12/16 ½	2,90,673 11 1 12/16	1,925 12 9¾	58,134 11 10½	—
	Particulars :									
1	Thooliabagu Channel -	1,342 7 4 1/16	37,906 7 9	1,400 2 4 2/16	39,314 5 11	5,927 6 7 11/16 ½	1,62,412 1 4	1,185 9 4½	32,482 6 9	46,530 - -
2	Samulcottah Channel -	830 9 14 6/16	30,603 4 2	935 0 12¾	36,463 6 7¾	3,700 16 10 1/16	1,28,261 9 9 12/16	740 3 5¼	25,652 5 1½	30,963 - -
	TOTAL - - -	2,172 17 2 7/16	68,509 11 11	2,335 3 0 14/16	75,777 12 6¾	9,628 3 1 12/16 ½	2,90,673 11 1¾	1,925 12 9¾	58,134 11 10½	77,493 - -

STATEMENT showing the Lands under the Thoolabaga and Samulcottah Channels, and their Cist, &c.—*continued.*

Numbers.	NAMES of CHANNELS	Maximum Extent of Land in the most favourable Years, Irrigated during the last 20 Years by the Waters of the Godavery, prior to the Construction of the Annicut, and the Revenue derived therefrom		The whole Extent of the Cultivated Lands of the Irrigated Villages by the Godavery, with its Annicut or otherwise, the Amount of Revenue derived therefrom, the Annual increased Extent of Land Irrigated each Year since the Annicut was brought into use, with the Increase of Annual Revenue therefrom.							
				FUSLY 1260.							
				LAND IRRIGATED				NOT IRRIGATED		TOTAL.	
		Land	Cist	Land.	Cist.	Teerva Jasty.	Total	Land.	Cist.	Land.	Cist.
		19.	20.	21	22.	23	24	25.	26.	27.	28.
		P t m.	*Rs. a p.*	*P. t m.*	*Rs a p*	*Rs a p*	*Rs. a. p.*	*P. t. m*	*Rs a p.*	*P t m.*	*Rs a. p.*
1	Thoolabaga Channel	766 3 5	27,111 5 8	170 3 2	3,818 10 8	1,189 – 11	5,007 11 7	1,341 5 9½	36,229 14 2	1,511 8 11½	41,237 9 9
2	Samulcottah Channel	414 3 8	15,139 13 –	395 3 3	14,680 2 4	5,080 6 10	19,766 9 2	309 7 1¼	8,272 10 8	704 10 4¼	28,039 3 10
		1,180 6 13	42,251 2 8	565 6 5	18,504 13 –	6,269 7 9	24,774 4 9	1,650 12 10¾	44,502 8 10	2,215 18 15¾	69,276 13 7
	Samulcottah Channel	283 11 15$\frac{8\frac{1}{4}}{16}$	11,449 4 1	257 11 1	7,296 3 9	5,704 9 6	13,000 13 3	14 14 8$\frac{14}{16}$	323 11 2	272 5 9$\frac{14}{16}$	13,824 8 5
	TOTAL - - -	1,463 18 12$\frac{8\frac{1}{4}}{16}$	53,700 6 9	822 17 6	25,801 – 9	11,974 1 3	37,775 2 –	1,665 7 3$\frac{10}{16}$	44,826 4 –	2,488 4 9$\frac{10}{16}$	82,601 6 –
	Particulars										
	Thoolabaga Channel	766 3 5	27,111 5 8	170 3 2	3,818 10 8	1,189 – 11	5,007 11 7	1,341 5 9½	36,229 14 2	1,511 8 11½	41,237 9 9
	Samulcottah Channel	697 15 7$\frac{8\frac{1}{4}}{16}$	26,589 1 1	652 14 4	21,98[illegible] 6 1	10,785 – 4	32,767 6 5	324 1 10[illegible]	8,596 5 10	976 15 14$\frac{5}{16}$	41,363 12 3
	TOTAL - - -	1,463 18 12$\frac{8\frac{1}{4}}{16}$	53,700 6 9	822 17 6	25,801 – 9	11,974 1 3	37,77[illegible] 2 –	1,665 7 3$\frac{10}{16}$	44,826 4 –	2,488 4 9$\frac{10}{16}$	82,601 6 –

STATEMENT showing the Lands under the Thoolıabaga and Samulcottah Channels, and their Cist, &c.—*continued.*

Numbers	NAMES of CHANNELS	The whole Extent of the Cultivated Lands of the Irrigated Villages by the Godavery, with its Annicut or otherwise, the Amount of Revenue derived therefrom, the Annual increased Extent of Land Irrigated each Year since the Annicut was brought into use, with the Increase of Annual Revenue therefrom.							
		FUSLY 1261.							
		LAND IRRIGATED.				NOT IRRIGATED.		TOTAL.	
		Land.	Cist.	Teerva Jasty.	Total.	Land.	Cist.	Land.	Cist.
		29.	30.	31.	32.	33	34.	35.	36.
		P. t. m.	*Rs. a. p.*	*Rs. a p.*	*Rs a. p.*	*P. t. m.*	*Rs. a. p.*	*P. t. m.*	*Rs. a. p.*
1	Thoolıabaga Channel - -	344 15 2	8,807 9 4	2,281 12 9	11,089 6 1	1,143 6 $7\frac{6}{16}$	31,814 2 6	1,488 1 $9\frac{6}{16}$	42,903 8 7
2	Samulcottah Channel - -	415 9 11	14,550 3 1	7,465 5 9	22,015 8 10	339 18 8	6,656 5 11	755 8 3	28,671 14 9
		760 4 13	23,357 12 5	9,747 2 6	33,104 14 11	1,483 4 $15\frac{6}{16}$	38,470 8 5	2,243 9 $12\frac{6}{16}$	71,575 7 4
1	Samulcottah Channel - -	284 11 14	8,176 - 10	6,431 6 8	14,607 7 6	- - -	- - -	284 11 14	14,607 7 6
	TOTAL - - -	1,044 16 11	31,533 13 3	16,178 9 2	47,712 6 5	1,483 4 $15\frac{6}{16}$	38,470 8 5	2,528 1 $10\frac{6}{16}$	86,182 14 10
	Particulars:								
1	Thoolıabaga Channel - -	344 15 2	8,807 9 4	2,281 12 9	11,089 6 1	1,143 6 $7\frac{6}{16}$	31,814 2 6	1,488 1 $9\frac{6}{16}$	42,903 8 7
2	Samulcottah Channel - -	700 1 9	22,726 3 11	13,896 12 5	36,623 - 4	339 18 8	6,656 5 11	1,040 0 1	43,279 6 3
	TOTAL - - -	1,044 16 11	31,533 13 3	16,178 9 2	47,712 6 5	1,483 4 $15\frac{6}{16}$	38,470 8 5	2,528 1 $10\frac{6}{16}$	86,182 14 10

STATEMENT showing the Lands under the Thoohabaga and Samulcottah Channels, and their Cist, &c.—(*continued*)

Numbers.	NAMES of CHANNELS.	The whole Extent of the Cultivated Lands of the Irrigated Villages by the Godavery, with its Annicut or otherwise, the Amount of Revenue derived therefrom, the Annual increased Extent of Land Irrigated each Year since the Annicut was brought into use, with the Increase of Annual Revenue therefrom							
		FUSLY 1262.							
		LAND IRRIGATED				NOT IRRIGATED.		TOTAL.	
		Land.	Cist.	Teerva Jasty	Total	Land	Cist.	Land.	Cist.
		37.	38.	39.	40.	41.	42.	43.	44.
		P. t. m.	*Rs. a. p*	*Rs. a. p.*	*Rs a p*	*P. t m*	*Rs a. p.*	*P. t. m.*	*Rs. a. p.*
1	Thoohabaga Channel -	1,132 1 2	29,752 6 7	6,058 5 2¾	35,810 11 9¾	712 17 15$\frac{9}{16}$	17,958 14 2¼	1,844 19 1$\frac{9}{16}$	53,769 10 -
2	Samulcottah Channel -	517 12 1	17,117 6 3	4,878 10 4	21,996 0 7	200 0 12$\frac{6}{16}$	4,307 10 5	717 12 13$\frac{6}{16}$	26,303 11 -
		1,649 13 3	46,869 12 10	10,936 15 6¾	57,806 12 4¼	912 18 11$\frac{15}{16}$	22,266 8 7¼	2,562 11 14$\frac{15}{16}$	80,073 5 -
1	Samulcottah Channel -	282 8 1	7,940 5 5	6,495 10 -	14,435 15 5	358 3 4	11,782 12 4	640 11 5	26,218 11 0
	TOTAL - - -	1,932 1 4	54,810 2 3	17,432 9 6¾	72,242 11 9¾	1,271 1 15$\frac{15}{16}$	34,049 4 11¼	3,203 3 3$\frac{15}{16}$	106,292 - -
	Particulars:								
1	Thoohabaga Channel -	1,132 1 2	29,752 6 7	6,058 5 2¾	35,810 11 9¾	712 17 15$\frac{9}{16}$	17,958 14 2¼	1,844 19 1$\frac{9}{16}$	53,769 10 -
2	Samulcottah Channel -	800 0 3	25,057 11 8	11,374 4 4	36,432 - -	558 4 0$\frac{6}{16}$	16,090 6 9	1,358 4 2$\frac{6}{16}$	52,522 6 0
	TOTAL - - -	1,932 1 4	54,810 2 3	17,432 9 6¾	72,242 11 9¾	1,271 1 15$\frac{15}{16}$	34,049 4 11¼	3,203 3 3$\frac{15}{16}$	106,292 - 9

STATEMENT showing the Lands under the Thooliabaga and Samulcottah Channels, and their Cist, &c.—*continued.*

Numbers.	NAMES of CHANNELS.	The whole Extent of the Cultivated Lands of the Irrigated Villages by the Godavery, with its Annicut or otherwise, the Amount of Revenue derived therefrom, the Annual increased Extent of Land irrigated each Year since the Annicut was brought into use, with the Increase of Annual Revenue therefrom.							
		FUSLY 1263.							
		LAND IRRIGATED				NOT IRRIGATED.		TOTAL.	
		Land.	Cist	Land.	Cist.	Land.	Cist.	Land.	Cist.
		45.	46.	47.	48.	49.	50.	51.	52.
		P. t. m.	*Rs. a. p.*	*Rs. a. p.*	*Rs. a. p.*	*P. t m*	*Rs a. p.*	*P. t. m.*	*Rs. a. p.*
1	Thooliabaga Channel - -	1,546 16 $12\frac{9\frac{1}{2}}{16}$	38,311 4 10	7,406 – $10\frac{3}{4}$	45,717 5 $8\frac{3}{4}$	739 15 $4\frac{10}{16}$	19,932 15 $2\frac{1}{4}$	2,286 12 $1\frac{3\frac{1}{2}}{16}$	65,650 4 11
2	Samulcottah Channel - -	634 3 $13\frac{15}{16}$	17,422 9 4	4,953 10 7	22,376 3 11	116 12 $10\frac{10}{16}$	3,274 1 2	650 16 $7\frac{14}{16}$	25,650 5 1
		2,081 0 $9\frac{14\frac{1}{2}}{16}$	55,733 14 2	12,359 11 $5\frac{3}{4}$	68,093 9 $7\frac{3}{4}$	856 7 $15\frac{1}{4}$	23,207 – $4\frac{1}{4}$	2,937 8 $9\frac{2\frac{1}{2}}{16}$	91,300 10 –
1	Samulcottah Channel - -	275 13 $12\frac{9\frac{1}{2}}{16}$	7,589 4 2	6,608 5 9	14,197 9 11	425 4 $11\frac{13\frac{1}{2}}{16}$	12,437 1 1	700 18 $8\frac{7}{16}$	26,634 11 –
	TOTAL - - -	2,356 14 $6\frac{1}{2}$	63,323 2 4	18,968 1 $2\frac{3}{4}$	82,291 8 $6\frac{3}{4}$	1,281 12 $11\frac{1\frac{1}{2}}{16}$	35,644 1 $5\frac{1}{4}$	3,638 7 $1\frac{9\frac{1}{2}}{16}$	1,17,935 5 –
	Particulars:								
1	Thooliabaga Channel - -	1,546 16 $12\frac{9\frac{1}{2}}{16}$	38,311 4 10	7,406 – $10\frac{3}{4}$	45,717 5 $8\frac{3}{4}$	739 15 $4\frac{10}{16}$	19,932 15 $2\frac{1}{4}$	2,286 12 $1\frac{3\frac{1}{2}}{16}$	65,650 4 11
2	Samulcottah Channel - -	809 17 $9\frac{14\frac{1}{2}}{16}$	25,011 13 6	11,562 – 4	36,578 13 10	541 17 $6\frac{7\frac{1}{2}}{16}$	15,711 2 3	1,351 15 $0\frac{5}{16}$	52,285 – 1
	TOTAL - - -	2,356 14 $6\frac{1}{2}$	63,323 2 4	18,968 1 $2\frac{3}{4}$	82,291 3 $6\frac{3}{4}$	1,281 12 $11\frac{1\frac{1}{2}}{16}$	35,644 1 $5\frac{1}{4}$	3,638 7 $1\frac{9\frac{1}{2}}{16}$	1,17,935 5 –

STATEMENT showing the Lands under the Thoolhabaga and Samulcottah Channels, and their Cist, &c.—*continued.*

The whole Extent of the Cultivated Lands of the Irrigated Villages by the Godavery, with its Annicut or otherwise, the Amount of Revenue derived therefrom, the Annual increased Extent of Land Irrigated each Year since the Annicut was brought into use, with the Increase of Annual Revenue therefrom

Numbers.	NAMES of CHANNELS.	TOTAL.							
		LAND IRRIGATED				NOT IRRIGATED		TOTAL	
		Land 53.	Cist. 54.	Teerva Jasty. 55.	TOTAL. 56	Land. 57.	Cist. 58.	Land. 59.	Cist. 60.
		P. t. m.	*Rs. a. p*	*Rs a. p*	*Rs. a. p.*	*P. t. m.*	*Rs. a p.*	*P. t. m.*	*Rs. a. p.*
1	Thoolhabaga Channel - -	3,193 16 $2\frac{9}{16}$	80,689 15 5	16,935 3 9½	97,625 3 2½	3,937 5 $5\frac{1}{16}$	1,05,593 14 -½	7,131 1 $7\frac{10\frac{1}{4}}{16}$	2,03,561 1 3
2	Samulcottah Channel - -	1,862 6 $12\frac{5}{16}$	63,776 5 -	22,878 1 6	86,154 6 6	965 19 0¼	22,810 12 2	2,828 7 $12\frac{9}{16}$	1,08,665 2 8
		5,056 4 $14\frac{1\frac{1}{4}}{16}$	1,44,466 4 5	39,313 5 8½	1,83,779 9 8½	4,903 4 $5\frac{5}{16}$	1,28,446 10 2½	9,959 9 $4\frac{1\frac{1}{4}}{16}$	3,12,226 3 11
1	Samulcottah Channel - -	1,100 4 $12\frac{9\frac{1}{4}}{16}$	31,001 14 2	25,239 15 11	56,241 14 1	798 2 $8\frac{11\frac{1}{4}}{16}$	24,543 8 7	1,898 7 $6\frac{5}{16}$	80,785 6 8
	TOTAL - - -	6,156 9 $11\frac{7\frac{1}{4}}{16}$	1,75,468 2 7	64,553 5 2½	2,40,021 7 9½	5,701 6 $14\frac{1}{32}$	1,52,990 2 9½	11,857 16 $0\frac{8\frac{1}{4}}{16}$	3,93,011 10 7
	Particulars,								
1	Thoolhabaga Channel - -	3,193 16 $2\frac{9}{16}$	80,689 15 5	16,935 3 9½	97,625 3 2½	3,937 5 $5\frac{1}{16}$	1,05,935 14 -½	7,131 1 $7\frac{10\frac{1}{4}}{16}$	2,03,561 1 3
2	Samulcottah Channel - -	2,962 13 $8\frac{4\frac{1}{4}}{16}$	94,778 3 2	47,618 1 5	1,42,396 4 7	1,764 1 $8\frac{15\frac{1}{4}}{16}$	47,054 4 9	4,726 16 $1\frac{4}{16}$	1,89,450 9 4
	TOTAL - - -	6,156 9 $11\frac{7\frac{1}{4}}{16}$	1,75,468 2 7	64,553 5 2½	2,40,021 7 9½	5,701 6 $14\frac{1}{32}$	1,52,090 2 9½	11,857 16 $0\frac{8\frac{1}{4}}{16}$	3,93,011 10 7

STATEMENT showing the Lands under the Thooliabaga and Samulcottah Channels, and their Cist, &c.—*continued.*

Numbers	NAMES of CHANNELS.	The whole Extent of the Cultivated Lands of the Irrigated Villages by the Godavery, with its Annicut or otherwise, the Amount of Revenue derived therefrom, the Annual increased Extent of Land irrigated each Year since the Annicut was brought into use, with the Increase of Annual Revenue therefrom.							
		AVERAGE.							
		LAND IRRIGATED.				NOT IRRIGATED.		TOTAL.	
		Land.	Cist.	Teerva Jasty.	Total.	Land	Cist.	Land.	Cist
		61.	62.	63.	64.	65.	66.	67.	68.
		P. t. m.	*Rs. a. p*	*Rs. a. p.*	*Rs. a. p.*	*P. t. m.*	*Rs. a. p.*	*P. t. m.*	*Rs. a. p.*
1	Thooliabaga Channel - -	798 9 −$\frac{10\frac{1}{4}}{16}$	20,172 7 10¼	4,233 12 11½	24,406 4 9¾	984 6 5$\frac{4\frac{1}{2}}{16}$	26,483 15 6	1,782 15 6$\frac{14\frac{1}{2}}{16}$	50,890 4 3¾
2	Samulcottah Channel - -	465 12 3$\frac{1}{16}$	15,944 1 3	5,594 8 4½	21,538 9 7½	241 9 12$\frac{1}{16}$	5,627 11 −½	707 1 15$\frac{2\frac{1}{2}}{16}$	27,166 4 8
		1,264 1 3$\frac{11\frac{1}{4}}{16}$	36,116 9 1¼	9,828 5 4	45,944 14 5¼	1,225 16 1$\frac{5\frac{1}{2}}{16}$	32,111 10 6½	2,489 17 5$\frac{1}{16}$	78,056 8 11¾
1	Samulcottah Channel - -	275 1 3$\frac{2\frac{1}{2}}{16}$	7,750 7 6½	6,310 – –	14,060 7 6½	199 10 10$\frac{3}{16}$	6,135 14 2	474 11 13$\frac{5\frac{1}{2}}{16}$	20,196 5 8½
	TOTAL - - -	1,539 2 6$\frac{1\frac{3}{4}}{16}$	43,867 – 7¾	16,138 5 4	60,005 5 11¾	1,425 6 11$\frac{8\frac{1}{2}}{16}$	38,247 8 8½	2,964 9 2$\frac{6\frac{1}{2}}{16}$	98,252 14 8¼
	Particulars:								
1	Thooliabaga Channel - -	798 9 0$\frac{10\frac{1}{4}}{16}$	20,172 7 10¼	4,233 12 11½	24,406 4 9¾	984 6 5$\frac{4\frac{1}{2}}{16}$	26,483 15 6	1,782 15 5$\frac{14\frac{1}{2}}{16}$	50,890 4 3¾
2	Samulcottah Channel - -	740 13 6$\frac{3\frac{1}{2}}{16}$	23,694 8 9¼	11,904 8 4½	35,599 1 2	441 – 6¼	11,763 9 2½	1,181 13 12$\frac{7\frac{1}{2}}{16}$	47,362 10 4½
	TOTAL - - -	1,539 2 6$\frac{1\frac{3}{4}}{16}$	43,867 – 7¾	16,138 5 4	60,005 5 11¾	1,425 6 11$\frac{8\frac{1}{2}}{16}$	38,247 8 8½	2,964 9 2$\frac{6\frac{1}{2}}{16}$	98,252 14 8¼

234.

N

STATEMENT showing the Lands under the *Thoohabaga* and *Samulcottah* Channels, and their Cist, &c.—*continued*

Numbers.	NAMES of CHANNELS	COMPARISON BETWEEN COLUMNS 59, 60 AND 14, AND 15.				COMPARISON BETWEEN FUSLIES 1260 AND 1261.			
		INCREASE		DECREASE.		INCREASE.		DECREASE.	
		Land	Cist.	Land.	Cist.	Land	Cist.	Land.	Cist.
		69.	70.	71.	72.	73.	74.	75.	76.
		P. t. m.	*Rs. a. p*	*P t. m.*	*R. a. p.*	*P. t. m*	*Rs. a. p.*	*P. t m*	*Rs. a. p*
1	Thoohabaga Channel - -	1,203 14 15$\frac{15}{16}$	41,148 15 11	- - -	- - -	- - -	1,665 14 10	23 7 2$\frac{2}{16}$	—
2	Samulcottah Channel - -	473 10 3$\frac{5}{16}$	29,173 14 6¼	- - -	- - -	50 17 14¾	632 10 11	—	—
		1,677 5 3¼	70,322 14 5¼	- - -	- - -	50 17 14¾	2,298 9 9	23 7 2$\frac{2}{16}$	—
1	Samulcottah Channel - -	552 8 4½	32,015 1 –	- - -	- - -	12 6 4$\frac{2}{16}$	1,282 15 1	—	—
	TOTAL - - -	2,229 13 7¾	1,02,337 15 5¼	- - -	- - -	63 4 2$\frac{14}{16}$	3,581 8 10	23 7 2$\frac{2}{16}$	—
	Particulars								
1	Thoohabaga Channel - -	1,203 14 15$\frac{15}{16}$	41,148 15 11	- - -	- - -	- - -	1,665 14 10	23 7 2$\frac{2}{16}$	—
2	Samulcottah Channel - -	1,025 18 7$\frac{13}{16}$	61,188 15 6¼	- - -	- - -	63 4 2$\frac{14}{16}$	1,915 10 –	—	—
	TOTAL - - -	2,229 13 7¾	1,02,337 15 5¼	- - -	- - -	63 4 2$\frac{14}{16}$	3,581 8 10	23 7 2$\frac{2}{16}$	—

STATEMENT showing the Lands under the *Thoolabaga* and *Samulcottah* Channels, and their Cist, &c.—*continued.*

Numbers.	NAMES of CHANNELS	COMPARISON BETWEEN FUSLIES 1260 AND 1262.				COMPARISON BETWEEN FUSLIES 1260 AND 1263.			
		INCREASE.		DECREASE.		INCREASE.		DECREASE.	
		Land.	Cist.	Land.	Cist.	Land.	Cist	Land.	Cist.
		77.	78.	79.	80.	81.	82.	83.	84.
		P. t. m.	*Rs. a p.*	*P. t. m.*	*Rs. a. p*	*P. t. m.*	*Rs a. p.*	*P. t. m.*	*Rs. a. p.*
1	Thoolabaga Channel - -	333 10 6$\frac{1}{16}$	12,532 – 3	- - -	- - -	775 3 5$\frac{11\frac{1}{2}}{16}$	24,412 11 2	—	—
2	Samulcottah Channel - -	13 2 9$\frac{2}{16}$	- - -	- - -	1,735 8 10	- - -	- - -	53 13 12$\frac{5}{16}$	2,388 14 9
		346 12 15$\frac{3}{16}$	12,532 – 3	- - -	1,735 8 10	775 3 5$\frac{11\frac{1}{2}}{16}$	24,412 11 2	53 13 12$\frac{5}{16}$	2,388 14 9
1	Samulcottah Channel - -	368 5 11$\frac{2}{16}$	12,894 3 4	- - -	- - -	428 12 14$\frac{9}{16}$	13,310 2 7	—	—
	TOTAL - - -	714 18 10$\frac{5}{16}$	25,426 3 7	- - -	1,735 8 10	1,203 16 4$\frac{4\frac{1}{2}}{16}$	37,722 13 9	53 13 12$\frac{5}{16}$	2,388 14 9
	Particulars:								
1	Thoolabaga Channel - -	333 10 6$\frac{1}{16}$	12,532 – 3	- - -	- - -	775 3 5$\frac{11\frac{1}{2}}{16}$	24,412 11 2	—	—
2	Samulcottah Channel - -	381 8 4$\frac{1}{4}$	12,894 3 4	- - -	1,735 8 10	428 12 14$\frac{9}{16}$	13,310 2 7	53 13 12$\frac{5}{16}$	2,388 14 9
	TOTAL - - -	714 18 10$\frac{5}{16}$	25,426 3 7	- - -	1,735 8 10	1,203 16 4$\frac{4\frac{1}{2}}{16}$	37,722 13 9	53 13 12$\frac{5}{16}$	2,388 14 9

STATEMENT showing the Lands under the *Thooliabaga* and *Samulcottah* Channels, and their Cist, &c.—*continued*

Numbers.	NAMES of CHANNELS.	TOTAL.				LAND IRRIGATED UNDER CANE CULTIVATION.		AVERAGE PRICES OF PADDY.	
		INCREASE		DECREASE		Land	Cist.	During the five years prior to the construction of the Annicut, per Madras Garce.	During the subsequent years per Madras Garce.
		Land.	Cist	Land	Cist.				
		85.	86.	87.	88.	89.	90.	91.	92.
		P. t. m.	*Rs. a. p.*	*P. t. m.*	*Rs. a. p.*	*P. t. m.*	*Rs. a p.*	*Rs. a. p.*	*Rs. a. p*
1	Thooliabaga Channel - -	1,108 13 11$\frac{12'}{16}$	38,610 10 3	23 7 2$\frac{2}{16}$	—	—	—	—	—
2	Samulcottah Channel - -	64 0 7$\frac{14}{16}$	632 10 11	53 13 12$\frac{5}{16}$	4,124 7 7	—	—	—	—
		1,172 14 3$\frac{10'}{16}$	39,243 5 2	77 0 14$\frac{7}{16}$	4,124 7 7	—	—	—	—
1	Samulcottah Channel - -	809 4 13$\frac{13}{16}$	27,487 5 -	—	—	—	—	—	—
	TOTAL - - -	1,981 19 1$\frac{7'}{16}$	66,730 10 2	77 0 14$\frac{7}{16}$	4,124 7 7	- - -	- - -	77 - -	69 - -
	Particulars :								
1	Thooliabaga Channel - -	1,108 13 11$\frac{12'}{16}$	88,610 10 3	23 7 2$\frac{2}{16}$	—	—	—	—	—
2	Samulcottah Channel - -	873 5 5$\frac{11}{16}$	28,119 15 11	53 13 12$\frac{5}{16}$	4,124 7 7	—	—	—	—
	TOTAL - - -	1,981 19 1$\frac{7'}{16}$	66,730 10 2	77 0 14$\frac{7}{16}$	4,124 7 7	- - -	- - -	77 - -	69 - -

Rajahmundry District, Cocanada,
29 July 1854,

(E. E) *G. N. Taylor*,
Sub-Collector in Charge.

No. 90.

FROM *G. N. Taylor*, Esq., Sub-Collector in charge, to *B. Cunliffe*, Esq , Sub-Secretary in charge Board of Revenue, Fort St. George.

Rajahmundry District, Dowlaiswarum,
Sir, 23 September 1854.

1. WITH reference to the extract from the proceedings of the Board of Revenue dated 11th instant, desiring me to furnish a more detailed report than has yet been drawn out on the effects of the annicut upon the general circumstances of this district, I have now the honour to submit for their consideration, transcript of a letter I addressed to the late chief engineer in May 1853, together with tables and statements regarding the subdivision; and a paper which I have drawn up from materials collected since I have had charge of the district, showing the improvement produced by the annicut on the talooks of the Collector's division.

2. The former paper was written at a time when considerable fear was entertained lest the estimates then before the Government should not receive their sanction, and that a portion of the project would in consequence be suspended—fears which were happily not realised. In the course of the remarks recorded in the paper more recently written, and which completes the subject as far as the whole district is concerned, enough has perhaps been said, in explanation of the reasons why I am unable to furnish the information in the exact form required by Government, with respect to the increase of wet cultivation, and in regard to the precise amount of benefit, direct and indirect, which has resulted from the annicut project, both to Government and to the population.

Pl. - 27,56,832
Int - 4,32,897
31,89,729

3. With my letter to the Board, in the Department of Public Works, I have forwarded statements of the entire expenditure on the annicut project, which with interest calculated at the rate of 5 per cent. per annum on all monies expended, is found to amount to *Rs* 31,89,729. Interest ought not properly to have been charged on the cost of those works which are in full operation and bring a large profit to Government; but, as I am desirous of avoiding the least appearance of under-valuing the expenditure, I have included the whole

Marked Z.

4. It will be seen from the large, comprehensive statement which accompanies this letter, and copy of which has already been forwarded to one of the members of the Board by the head sheristadar, that the net aggregate increase to the revenue of the whole district since the commencement of the annicut, has been eight lacs; and it will also be observed from the table annexed to paragraph 4 of the report on the Collector's talooks, and to paragraph 2 of the letter to Colonel Cotton, that the excess revenue actually realised during the seven years from 1257 to 1263, in the Delta talooks alone, is six lacs. The Government are able to judge, whether or not I have fairly attributed this increase to the operation of the annicut and its subsidiary works, and whether at the very lowest computation, the State has not been amply repaid for the entire outlay on the project, both in direct profit by increase of revenue, and by the incalculable and lasting benefit which has resulted to the people, and to the general circumstances of the district.

I have, &c.
(signed) *G. N. Taylor*,
Sub-Collector in charge.

No. .

To Colonel *A. Cotton*, Chief Engineer, Madras.

Sir, Samuldini, 4 May 1853.

1. I HAVE the honour to acknowledge your letter of the 4th April desiring information, which will enable you to judge of the effects of the annicut works, upon the several talooks of the subdivision. The statements and tables which I have now the pleasure to send you, have been prepared in my office, and will be forwarded officially to the Collector of Rajahmundry, in order to show in what manner the talooks under my charge have benefited by the annicut project generally, and I trust that the following remarks will afford a clear explanation of my own views, upon all the subjects regarding which you require information.

2. It is necessary to premise, that it has not yet been possible to impose on the land of the talooks of my division, teervajasty properly so called, because none of the cultivated lands have hitherto changed their class from dry to wet, or from wet to garden, in consequence of improved irrigation In order therefore to show how the subdivision has benefited by the annicut project, it seemed to me necessary to frame such a return as should exhibit at one view a comparison between the revenue of these talooks, for the fusly 1256, year immediately preceding the commencement of the annicut, and that for the present year, fusly 1262 ; showing at the same time, the depressed state of this part of the district for 12 or 20 years anterior to fusly 1256, the gradual improvement of the revenue during the progress of the construction of the annicut, and the increase in every year since its completion. To make this table more comprehensive, I have also endeavoured to show in what manner the entire amount of this increase may fairly be attributed to the direct and indirect effects of the Government works, as distinguished from the amount to which the demand upon the ryots must have been restricted, if no such improvements had been undertaken for their benefit. The separate return forwarded with this letter, will be found to comprise complete information upon all the above points in regard to every village of the three talooks of Mogultoor, Woondy, and Tankoo.

3 A statement which should exhibit the extent and kist of those lands only which have been actually watered by the new annicut channels, would be comparatively of little use, because as I said before, there has been no change of crop, nor has an acre of land been reclaimed from waste, but the entire extent of these three talooks having been exposed more or less in former years to both the good and bad effects of the Godavery water, the whole of the land has benefited by the execution of these works, either by improved and certain irrigation, by protection from floods, or relief by drainage.

4. Before proceeding to notice individual villages, which I propose doing by-and-by, choosing for that purpose for the sake of example, a few villages from each talook, it will perhaps put the matter in a clearer light, if I show in the first place, what has been the increase of revenue derived from those lands which are under the influence of the Godavery, as distinguished from those which, from their high level, the water of the river will probably never reach

5 It is possible that the above figures are not perfectly accurate, for, in order to save time, the calculations have been made from accounts in my cutcherry, and from my general knowledge of the particulars of each talook, but they cannot be materially incorrect The land which is not affected by the Godavery, is chiefly in the Thademulla talook, the kist of high land in the other three talooks which the river has never yet reached, amounts to the insignificant sum of 12,000 or 14,000 rupees.

6. The following statement giving the actual collections of the three talooks of Mogultoor, Woondy, and Tankoo for the last 12 years, will show the aggregate results of the six years from the first commencement of the annicut, as compared with those of the corresponding period immediately preceding:—

STATEMENT showing the Increase of Kist on Lands capable of Irrigation by the *Godavery*, in the Subdivision of *Rajahmundry*, Comparison between Fusly 1256 and 1262.

Number	TALOOKS. 1.	Beriz of 1262 2.	Deduct Shist of High Land not Irrigated by the Godavery 3.	Remainder Shist of Lands Irrigated by the Godavery 4.	Average Collection of a Series of Years prior to Fusly 1255 5.	Average Collections of Five Years from Fusly 1251 to 1255 on Land capable of Irrigation by the Godavery. 6.
1	Mogultoor - -	1,59.959 15 4	13,957 5 10	1,46,002 9 6	1,31,802 6 4	7,83,821 1 7
2	Woondy - -	1,42,369 11 6	490 – –	1,41,879 11 6	1,00,360 10 11	6,34,448 7 8
3	Tankoo - -	1,75,591 11 –	- - -	1,75,591 11 –	1,48,140 4 1	8,71,925 7
	TOTAL - -	4,77,921 5 10	14,447 5 10	4,63,474 – –	3,80,303 5 4	22,90,195 – 9
4	Todemulla - -	34,810 – –	34,810 – –	- - - -	- - - -	1,72,721 2 10

(*continued*)

Note to Column 5.—*In the* Tankoo *talook, the* average *of* 20 years is given. In Woondy, the accounts of some villages were procurable only for 10 or 15 years, and in Mogultoor from 5 to 14 years.

STATEMENT showing the Increase of Kist on Lands capable of Irrigation by the *Godavery*—*continued.*

Number.	TALOOKS.	Beriz of Fusly 1256. Shist of Lands capable of Irrigation by the Godavery 7.	 Shist of Lands not Irrigated by the Godavery. 8.	 TOTAL. 9.	Increase of Shist, compare Columns 4 and 7. 10.	Increase of Shist, compare Columns 3 and 8. 11.	TOTAL. 12.
1	Mogultoor -	1,20,561 6 10	12,039 7 1	1,38,600 13 11	19,441 2 8	1,917 14 9	21,359 1 5
2	Woondy -	1,22,004 8 11	410 – –	1,22,414 8 11	10,875 2 7	80 – –	19,955 2 7
3	Tankoo -	1,52,275 11 7	- - -	1,52,275 11 7	23,315 15 5	- - -	23,315 15 5
	TOTAL - -	4,00,841 11 4	12,449 7 1	4,13,291 2 5	62,632 4 8	1,997 14 9	64,630 3 5
4	Todemulla -	- - - -	34,865 1 9	34,865 1 9	- - -	55 1 9	—

STATEMENT of the Gross LAND REVENUE of the Three Talooks of *Mogultoor, Woondy,* and *Tankoo,* from Fusly 1251 to 1262 inclusive.

A. D.	Fusly.	Collections.	Decrease.	Increase	Prices for Madras Garce White Paddy	 Black Paddy
			Comparison of each Year with Fusly 1251.			
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs a. p
1841-42 - - -	1251 - -	3,82,728 4 10	- - -	- - -	93 5 –	54 9 –
1842-43 - - -	1252 - -	3,80,432 15 7	2,295 5 3	- - -	57 9 3	46 13 5
1843-44 - - -	1253 - -	3,26,232 3 4	56,496 1 6	- - -	53 10 8	45 10 3
			58,791 6 9			
1844-45 - - -	1254 - -	3,87,886 9 9	- - -	5,158 4 11	58 1 4	52 1 5
1845-46 - - -	1255 - -	3,99,623 12 3	- - -	16,895 7 5	85 3 2	73 8 8
1846-47 - - -	1256 - -	4,13,291 2 5	- - -	30,562 13 7	83 1 10	74 11 8
			58,791 6 9	52,616 9 11		
		Net Decrease - - - Rs.	6,174 12 10			
			Comparison with Fusly 1256.			
1847-48 - -	1257 - -	4,23,475 4 2	- - -	10,184 1 9	76 4 –	67 2 –
1848-49 -	1258 - -	4,40,660 9 5	- - -	27,369 7 –	72 4 –	63 8 –
1849-50 -	1259 - -	4,31,927 – 3	- - -	18,635 13 10	75 14 –	60 4 –
				56,189 6 7		
[illegible]	1260 -	[illegible] 1 10	- -	[illegible] 13 5	72 6 –	65 2 –
[illegible]	1261	[illegible]	- - -	[illegible] 8 8	[illegible] 4 8	52 9 4
[illegible]	1262	[illegible] 10	- -	[illegible] 8 3	48 – –	42 – –
		Aggregate Increase -	- Rs.	[illegible]		

Hence it appears that, although the revenue of Fusly 1256 was upwards of [illegible] beyond that of Fusly 1251, the net decrease for the period [illegible] by these two [illegible] Rs. 6,174 12 10; or in other words, the [illegible] would have been [illegible] to that [illegible] of the revenue had [illegible] throughout that period [illegible] the year 1256 the revenue, [illegible] has been [illegible] and while the collections of fusly 1262 are 64,000 rupees in excess of those of fusly 1256, the aggregate increase for this last period amounts to *Rs.* 200,308; that is to say, the Government are richer by two lacs of rupees than they would have been had the revenue made no advance after the commencement of the annicut.

8. This comparison, however, would not of itself be sufficient to show the value of these works, because the commencement of the annicut was not the turning point in the revenue. It had increased very considerably in fusly 1254–55, and 1256, although not sufficiently to compensate for the large diminution in fusly 1253. The cause of this latter decrease will enable us to appreciate the improvements which have been made since.

9 The loss in that fusly was occasioned by a heavy flood of the Godavery, when the entire face of the country was exposed to the unchecked ravages of the inundation; but in fusly 1259 there was a still higher flood, and the country being partially protected, although the annicut was not finished, the loss was considerably less.

In fusly 1262, when the river rose higher than on either of the previous occasions, and the flood continued at its height for a most unusual period, the loss was so trifling that it has not been found necessary, except in a very few cases, to grant remissions. I have put down the collections of the three talooks for the current fusly at *Rs* 4,77,921. 5. 10, which is *Rs.*6,800 less than the demand, and is the amount which I consider will be collected without any difficulty.

It is proper to remark, however, that although the figures 4,31,927 represent the collections belonging to fusly 1259, *Rs* 35,000 of that amount were postponed and actually collected in fusly 1260

10. It is impossible to estimate with any approach to accuracy the amount of loss which those talooks would have suffered in the present fusly, had there been no embankments to protect the lands, no drainage to relieve them, and no irrigation channels to supply the after-crops when the first had perished. With the effects of previous floods before us, it is not too much to say that the inundation of the past year, which exceeded both the previous ones in volume, if not in duration, would have reduced the revenue 10 or 15 per cent, and caused an amount of damage which would have completely dispirited the people, and from the effects of which it would have taken them long years to recover.

11. It seems to me that the foregoing figures speak for themselves; it requires no argument to show, that, with two such visitations as the floods of 1849 and 1852, a clear return of 200,000 on those six years could not have been obtained by unaided revenue management, however able and vigorous. Knowing the result of the previous period, we may presume, on the contrary, that, without any improvement in the public works, there would have been a deficiency instead of a surplus. I think, therefore, that I am justified in ascribing the entire increase and security of the revenue during the last six years to the operation of the annicut works.

12. To put the matter in a yet stronger light, I here enter the following statement of the collections for the same two periods in the Todemulla talook, which is above the annicut, and not directly affected by it :—

STATEMENT showing the Annual LAND REVENUE of *Todemulla*, from Fusly 1251 to 1262 inclusive.

FUSLY.	COLLECTION.			DECREASE.			INCREASE.		
				Comparison with Fusly 1251.					
	Rs.	*a.*	*p.*	*Rs.*	*a.*	*p.*	*Rs.*	*a.*	*p.*
1251 - - - - -	28,616	3	7	—			—		
1252 - - - - -	26,683	–	10	1,933	2	9	—		
1253 - - - - -	27,418	13	10	1,197	5	9	—		
1254 - - - - -	29,572	12	4	- - - -			956	8	9
1255 - - - - -	25,565	–	6	3,051	3	1	—		
1256 - - - - -	34,865	1	9	- - - -			6,248	14	2
				6,181	11	7	7,205	6	11
							1,023	11	4

(continued)

STATEMENT showing the Annual Land Revenue of *Todemulla*, &c.—*continued*

FUSLY.	COLLECTION.			DECREASE.			INCREASE.		
				Comparison with Fusly 1256.					
	Rs.	*a*	*p.*	*Rs.*	*a.*	*p*	*Rs.*	*a*	*p.*
1257 - - - - -	29,297	15	–	5,567	2	9	—		
1258 - - - - -	28,679	11	–	6,185	6	9	—		
1259 - - - - -	27,745	11	10	7,119	5	11	—		
1260 - - - - -	30,741	10	9	4,123	7	–	—		
1261 - - - - -	32,569	2	–	2,295	15	9	—		
1262 - - - - -	34,810	–	–	55	1	9	—		
				25,346	7	11	—		

These figures exhibit a lamentable contrast to the results in the other three talooks of the division, and the remarkable fluctuation requires some explanation. The first material advance was made in fusly 1254, the year after Sir Henry Montgomery visited this district as Commissioner, and the first year of the subdivision, fusly 1255, was a year of dearth. Fusly 1256, a year of plenty; many of the villages were then settled under the sharing system, and the produce of the Assara land in the former year was only three candies, while in the latter it amounted to 400 candies. In fusly 1257 it fell again to 116, and in fusly 1258 to 48 candies. The same causes, viz. scanty, unseasonable, or excessive rains, produced similar results in the rented villages of the talook, and the revenue gradually declined until fusly 1259; since that year the village renting system has been established throughout the talook, and the revenue has steadily increased; but the Beriz even now is lower than it was six years ago, not from the total neglect of public works, but because it could not share to any extent in those grand improvements which have secured the other talooks from similar loss.

Direct and indirect effects of the annicut works.

13. I will now proceed to show more particularly in what manner I consider that the villages in the talooks under my charge, have profited by the annicut project. The benefits have been both direct and indirect, and vary of course according to different localities. The direct benefits are three-fold, and are defined in the first question of your letter: 1st. The preservation of the lands from floods by the new system of embankments; 2d. Their relief by the cutting of drainage channels; 3d. The supply of the lands with water throughout the year.

14. But I do not consider that any one of these three causes had begun to operate upon the revenue to any great extent, until the completion of the annicut in fusly 1260. It is true that the Godavery embankments were stronger and in better order than they had ever been before, but this improvement had not been found sufficient to avert the calamitous effects of the floods of fusly 1259. The increase which occurred previous to that year, fusly 1260, must be attributed almost entirely to the indirect effect produced by the large expenditure of money on the public works.

15. The employment of many thousands of people at seasons when they could not have found work elsewhere, opened out to the labouring class a new and profitable means of livelihood, and secured to the ryot, the tradesman, and the merchant, a large and certain market for agricultural products and merchandise of all kinds. No proof is wanting of the improved condition of the labouring class; many of them have risen from a state approaching to slavery, to be independent cultivators, that is to say, that instead of working as before for an inadequate daily hire, some of them now possess small holdings of their own, paying kist to Government, while others are content to sell their labour to Government for the ample pay they receive at the public works. It must be admitted that the change bears very hard upon individuals among the better and more wealthy class of ryots, accustomed and entitled by long prescriptive right to the services of their serfs or under labourers, who in return have enjoyed certain rights and immunities, and even the site upon which they live, at the will of their lord: those proprietors now find themselves deserted in favour of the Government works, and are frequently in want of hands for the

tillage of their fields at the proper seasons. The natural effect has been a rise in the wages of labour, but, as compulsory attendance at the Government works is no longer enforced, the better class of ryot has no real grievance on that score. He admits that after a temporary absence, his under-labourer returns to the village with a bag of money, but because the latter surrenders no portion of his gains, he finds it difficult to realise the principle, that the money does find its way to him in some shape or other, and that the servant's prosperity is undoubtedly conducive to the benefit of the master.' It will take some little time, perhaps, to impress this truth upon the natives generally, but in some villages they are already beginning to understand it.

16. You are aware that the subsidiary works for the irrigation of that portion of the delta which lies to the west of the Vasista Godavery, were only commenced in the spring of 1851 (fusly 1261), but in fusly 1260, a considerable sum was expended in repairing and strengthening the river embankments; the two large mouths of the Boopyah and Jeggaraz Kalvas were effectually bunded, and various other improvements executed to prevent a repetition of the disastrous effects of the inundation of fusly 1259 But it was not until fuslies 1261 and 1262 that the country was relieved by the commencement of the drainage channels, or the people benefited by the certain supply of water, first in the Gosta Nuddee and Wyairoo, and afterwards in the other channels that are now in course of completion. In determining therefore what portion of this increase of revenue is owing to the several direct and indirect effects of the annicut works, I have been guided by those circumstances, and have attributed the profit of the three years from fusly 1257 to 1259 inclusive, to the general expenditure, that of fusly 1260 and 1261, to the effect of improved embankments and drainage; and the increase of fusly 1262, to the actual supply of water in all seasons.

Dates of the accomplishment of various works on the Godavery, western bank —

May 1851. Wyair project commenced

August 1851 Chettypetta Calingulah finished Head of Gosta Nadee opened

September 1851. First dhony passes through Vizzaseavram lock

February 1852. Nundamoor lock opened

April 1852 Kakarapurroo channel opened.

August 1852 Yellamunchally channel opened

January 1853 Palacole channel finished Parimella lock opened *

February 1853 No 1. Asunta irrigation channel opened

March 1853 No. Asunta irrigation channel opened

April 1853 Mookkamoolla lock opened

17 The following is a statement, exhibiting the advantage derived from the Government works in a few villages selected from each delta talook of the subdivision: they will serve as an exemplification of the whole, for the separate table which accompanies this letter, is prepared in the same form, and contains the particulars of every village in the three talooks:—

STATEMENT showing the Effect of the several Works of the ANNICUT Project upon the Revenue of a few Villages of each of the three Delta Talooks in the Subdivision of *Rajahmundry*

	Talooks	Irrigating Channels	Villages.	Permanent Beriz.	Highest Collection		Lowest Collection		Average Collection from Fusly 1251 to 1255
					Fusly	Amount.	Fusly	Amount	
	1	2	3	4	5	6	7	8	9
				Rs. a. p		*Rs a p*		*Rs. a p*	*Rs a. p*
1	Mogultoor -	Nuckkala -	1. Asunta - -	18,053 13 –	1236	21,665 1 2	1255	15,100 12 9	13,725 11 8
		Palacole - -	2 Padoor - -	4,345 5 2	1243	7,434 5 3	1255	3,300 – –	3,110 – –
		Yellamunchely -	3 Codumuuchely -	5,553 12 –	1254	5,663 6 8	1247	3,376 10 9	4 454 14 4
		Nuckkala -	4 Vamanarum -	3,403 1 1	1261	6,000 – –	1258	2,459 1 9	3,469 7 2
				31,354 15 3		39,252 13 1		24,736 9 3	24,760 1 2
2	Woondy -	Gosta - -	1 Sroongavroochum	7,233 11 2	1223	7,009 12 –	1225	3 229 4 9	4,968 – 2
		Ditto - -	2 Gollalakodair -	3,259 8 2	1229	3 315 – 6	1232	150 8 6	2 139 12 4
		Ditto - -	3. Mahdepatam -	6,422 5 8	1226	4,205 13 2	1231	1,059 15 –	1,796 13 10
		Ditto - -	4. Royakodair -	4,696 8 9	1221	5,159 2 2	1222	2 326 1 11	3,478 5 10
				21,612 1 9		19 689 10 10		6,765 14 2	12 381 - 2
3	Tankoo -	Gosta - -	1 Velpoor - -	5 795 2 1	1226	7,177 2 6	1256	5,000 – –	4,740 9 1
		Ditto - -	2 Ramasevarum -	1,921 11 10	1222	2 725 8 5	1256	1 411 15 –	1,100 – –
		Ditto - -	3. Mortair - -	1,611 11 1	1222	2 359 10 5	1258	1,225 – –	1,100 – –
		Ditto - -	4. Pengonda - -	5,221 9 6	1224	6,665 8 9	1253	2,770 15 –	3,575 – –
				14 550 2 7		18,930 14 1		10,407 14 -	10 515 9 1
				67,517 3 7		77,873 6 -		41,910 3 5	47,656 10 5

STATEMENT showing the effect of the several Works of the Annicut Project upon the Revenue, &c.—*continued.*

Villages.	Beriz for Fusly 1256. 10	Beriz for Fusly 1262 11.	Aggregate Increase of Shist from Fuslies 1257 to 1262 over Fusly 1256: Increase in Fuslies 1257, 58 and 59, of Profit by General Expenditure. 12	Increase in Fuslies 1260 and 61, of Profit by Embankments and Drainage 13	Increase in Fusly 1262, of Profit by actual Supply of Annicut Water 14	Total of Columns 13 and 14. 15	Total of Columns 12 and 15 16
	Rs a p.	*Rs a. p.*	*Rs a p*	*Rs a p.*	*Rs a p*	*Rs a. p*	*Rs a. p.*
1. Asunta - -	15,108 1 –	17,600 – –	2,110 13 –	3,389 14 -	2,494 15 –	5,884 13 –	7,995 10 –
2 Padoor - -	3,506 14 5	5,200 – –	1,232 13 9	2,386 3 7	1,693 1 7	4,079 4 9	5,312 2 6
3. Colomunchely -	4,852 13 6	5,350 – –	423 8 –	459 5 6	497 2 6	956 7 6	1,379 15 6
4. Vamanarum - -	3,744 12 –	4,500 – –	235 12 –	1,635 12 –	- - -	1,635 12 –	1,871 8 –
	27,209 8 11	32,650 – –	4,002 14 9	7,871 2 2	4,685 3 1	12,556 5 3	16,559 4 –
1. Sroongavroochum -	5,180 – –	6,150 – –	1,205 – –	1,450 – –	970 – –	2,420 – –	3,625 – –
2 Gollalekodair -	2,618 5 6	3,463 12 6	842 12 9	1,277 1 6	845 7 –	2,122 8 6	2,965 5 3
3 Mahdepatam -	2,450 – –	3,245 – –	710 – -	1,098 14 5	795 – –	1,893 14 5	2,603 14 5
4. Royakedair - -	4,071 – 3	5,130 – –	1,282 10 6	1,631 15 6	1,058 15 9	2,690 15 3	3,973 9 9
	14,319 5 9	17,988 12 6	4,040 7 3	5,457 15 5	3,669 6 9	6,127 6 2	13,167 13 5
1. Velpoor - -	5,000 – –	6,100 – –	1,516 13 11	1,500 – –	1,100 – –	2,000 – –	4,116 3 11
2. Ramasevarum -	1,411 15 –	2,000 – -	827 10 –	816 1 –	588 1 –	1,404 2 –	2,231 12 –
3. Mortair - -	1,225 – –	1,865 – -	475 – –	571 – –	640 – –	1,211 – –	1,686 – –
4. Pengonda - -	3,650 – –	4,803 8 11	450 – –	708 7 –	853 8 11	1,561 15 11	2,011 15 11
	11,586 15 –	14,768 8 11	3,268 13 11	3,598 8 –	3,181 9 11	6,777 1 11	10,045 15 10
	53,115 13 8	65,407 5 5	11,312 3 11	16,924 9 7	11,536 3 9	28,460 13 4	39,773 1 3

* 755 rupees of this amount is the increase in fusly 1262, but as no water has yet been conducted to the village of Vamavarum, it is entered in Column 13.

18. The first village is Asunta, in the Mogultoor talook, which is now watered by a cut from the Yellamunchelly channel. In fusly 1257, 1258, and 59 during the construction of the annicut, the ryots profited largely by the increased demand for products of all descriptions occasioned by the wages received on the Government works by large masses of the people; the amount under this head is *Rs* 2,110. 13., as entered in Column 12 The chief products are those of the most valuable kinds, requiring careful culture, and a considerable amount of artificial irrigation. Until fusly 1260, these lands had been exposed to the ravages of floods, and a large portion of the crop was annually destroyed, but by the repairs of bunds, and chiefly by the raising of an embankment across the mouth of the Jaggarazoo Codue, the crops in that and the following year were preserved, and the profit was very large The increase of revenue for those two years, as entered in Column 13, was *Rs.* 3,389. 14.

19. In the current fusly (1262), not only was there one of the largest floods on record, but the whole of the dry crops, the principal produce in this part of the district, were almost completely destroyed by the excessive and unseasonable rain which fell in December; considerable doubts were entertained whether it would have been possible to collect the large kists of that and the following months, but fortunately for the ryots and for Government, in consequence of the constant supply of water from the two channels branching from the Nuckkala Calva, the pyra, or after crops, were excellent; the ryots were indemnified for their previous loss, and the Government demand has been realised in full. I have no hesitation in saying, that but for this timely aid, the loss in this village alone would have amounted to 4,000 rupees.

20. The other villages in this talook were similarly watered by the Palacole, Yellamunchely and Nuckkala channels, and the above remarks apply generally to them all.

21. In Tankoo, the improvement is not less conspicuous. In the villages selected, the crops of Bengal gram, oil seeds, &c., have been brought forward or revived by water from the Gosta Nadee and Palacole channels.

22. The effect of these works upon the Woondy talook, has been still more remarkable. The almost constant supply of water in this and in last year, in

the numerous old branch channels from the Gosta Nadee, has enabled the ryots to forestall by many weeks, the usual season for sowing, and afterwards transplanting their first paddy crop, a circumstance which ensures them a rich harvest In many parts of the talook, they are now certain of water for the irrigation of the Dalwa crop, which being before dependent on precarious rains, they seldom or never reaped; and in many villages, grain, cotton, &c, have been grown upon land which was never known to produce a dry crop before

23 Nor is this all; the relief of the lands by what has been already effected in the way of drainage is very striking. The value of the crops already grown on land so relieved, and which would have been nearly unproductive without drainage, is perhaps small, but when the large drain from Gollala Codaroo following the old course of the Gosta Nadee, is completed, a very large extent of land will, I hope, be reclaimed for cultivation

24. Where the improvement has been so general, and the increase in the revenue is owing to various direct and indirect causes, it is perhaps difficult to determine precisely, the proportion which is properly attributable to each particular part of the work The division is necessarily arbitrary, but the arrangement which I have adopted in the separate return that accompanies this letter is borne out, as explained in the few instances selected, by the circumstances of each particular village If it has been satisfactorily shown that those several effects have combined to produce this increase of revenue, it matters little that we have over-rated the benefit derived from any one part of the project.

25. I ought not to close this part of the subject without alluding to the very material effect which the annicut has produced upon the revenue derived from the sales of salt. The salt swamps in the Mogultoor talook may be calculated to contain at least 5,000 acres. The names of the villages with the extent of land entered under this head in the accounts of each village, is given in the margin. Ten years ago, the Government incurred considerable expense for the protection of the salt produced upon these plains, and in fusly 1251 realised *Rs* 28,219 13, by the sale of that portion which the vigilance of its officers had secured from illegal removal The value of spontaneous salt formerly removed clandestinely, and consumed by the people, may be estimated at 40 or 50 000 rupees Since the month of March 1852, the flow of fresh water from the Gosta Nuddee has entirely stopped the production of such salt except in one or two villages, and the sales at the Mogultoor depôt, from July 1852 up to April last, have already exceeded those of the previous fusly by 8,000 rupees, and the sales to the end of the fusly will probably amount to 20 000 rupees more When the soil of these plains becomes thoroughly sweetened by the continued washing of Godavery water, not only will the salt revenue continue to increase, but a considerable tract will also be fit for cultivation

Matchapura	50
Mallavaram	—
Kamsaladaba-thapudi	9
Tosaregutta-paud	150
Vempa	40
Tarsumarru	20
Tundurru	50
Kalnapaudi	2[illegible]
Mamedipadu	15
Cadera	7-10
[illegible]namadurru	15
	[illegible]10

Have the circumstances of the ryots improved with the increase of revenue?

26. With respect to the question, whether with this increase in the assessment, the ryots have improved in their circumstances, I think there can be but one opinion There are, of course, individual exceptions, cases where taxation has pressed too heavily, and villages which it has been found necessary to relieve of part of their burden, but I can confidently point to those villages which have borne the highest increase of assessment, as being the richest and the most thriving of the sub division While, on the other hand, those villages that have not yet shared in the improvements, have become impoverished and partially depopulated, through continual neglect or exposure to hopeless inundations, from which there appeared no relief I am happy to say that the inhabitants of these villages are no longer desponding, they have not been unmoved spectators of what has been doing around them, and they look forward with hope to a share of those benefits which others have already secured.

If there be no delay in the prosecution of the works, will the revenue continue to increase for some time to come, but only to such an

27. I trust that I have succeeded in showing clearly, that the extraordinary increase of revenue in these talooks is due mainly, if not entirely, to the annicut works, that this improvement has been gradual, and annually progressive in proportion as the project proceeded: and that the pressure of this enhanced assessment has not been too severely felt by the ryots in general, who, on the contrary,

amount as will admit of the steady increase of private property?

contrary, have improved in their circumstances. The benefit which has already been secured, is an earnest of what may yet be done; to stop short at the point when the real fruit of our labour is about to be gathered, when the whole mass of the people are eagerly anticipating the completion of the project, seems to me to be the very worst policy. The results which have followed the partial relief in the Woondy talook, testify to the importance of the immediate completion of the drainage of that part of the country; while the effects of the limited supply of water which has already reached the villages of Mogultoor, point to the expediency of extending the benefit to every other part of that and the Tankoo talook.

28. The ryots are not now, as heretofore, regardless of improvement; they are deeply interested in the progress of the works, and every village desires its own watercourse. It is no longer necessary to compel them to the adoption of measures for their own benefit, for they are not slow to recognise a personal advantage when it costs them nothing, and hence it may be confidently argued that there will be an extensive use of these irrigation channels when once they are completed. Some villages are, of course, more backward than others, and whether it arises from difference of soil or from other causes which have influenced the cultivation, it is remarkable that both in Mogultoor and Tankoo the ryots have been satisfied with using the water, to ensure good returns of their usual crops, rather than attempt the culture of rice or other more valuable products. It is partly a want of confidence in their own resources, and an uncertainty of what is to befal them, that, I am persuaded, prevents them in many instances from attempting improvements. It is not surprising that many are found to hesitate and hold back, when they know full well that the revenue officers of Government are on the watch to increase their assessment. Let them first understand that it is really for their benefit that these works are undertaken, that the Government are not anxious to tax them beyond their resources, its first object being the prosperity of the people, and there need be no apprehension regarding the increase of revenue. This, it appears to me, will prove the surest means of creating and confirming private property, and it must have a beneficial effect upon the revenues of Government.

29. I think that the assessment in some parts of the division is already too high, in others that it has been raised to a point which ought not to be exceeded, and that in general we ought to be satisfied with the improvement that has already taken place, without pressing the ryots at a period when all their spirit and energy requires support and encouragement. If we are in too great a hurry to claim extra payment for every drop of water which is carried to their fields, we shall but drain their resources and destroy that hope of the future which now pervades all classes, and ultimately fail to reap those benefits which a more liberal course would have undoubtedly secured.

30. In support of the truth of these remarks, I subjoin a table of the extent of cultivated, fallow, and waste land in each talook of the division:—

TABLE of the entire Extent of CULTIVATED and UNCULTURABLE LAND of all Descriptions in Three Talooks of the Subdivision.

		Jeroytee Land, included in Amarkum.			Immemorial Waste 5.	Enam.			Grand Total.	
No.	Talooks. 1.	Cultivated. 2.	Fallow. 3.	Total. 4.		Kuttoobady. 6.	Doombala. 7.	Total. 8.	Pooties, Columns 4, 5, and 8. 9.	Acres. 10.
		Pooties.								
1	Mogultoor -	4,571 0 0	744 14 13	5,315 14 13	190 18 8	659 8 5	1,609 12 4	2,269 0 9	7,775 13 14	62,205
2	Woondy -	4,934 9 5	1,569 17 8	5,904 6 13	27 4 5	464 5 13	1,544 11 9	2,008 17 6	7,940 8 8	63,524
3	Tankoo -	4,374 2 9	849 2 1	5,223 5 8	6 8 6	916 19 9	1,999 13 11	2,916 13 4	8,146 7 2	65,171
		13 279 11 14	3,163 15 4	16,443 7 2	224 11 3	2,040 13 11	5,153 17 8	7,194 11 3	23,862 9 8	1,90,900

31. It is seen from the above table, that the whole area of assessed jeroytee, or Government land in the three talooks, is, 16,443. 7. 2. pootties, or 1,31,547 acres; the assessment amounts to 4,71,957. 1 10., and the average rent therefore paid to Government is, *Rs.* 3. 9. 5. per acre.

The following figures will be found to give the average in each talook.—

TALOOKS.	Area of Cultivated Land in Acres.			Kist.			Average per Acre		
	Acres	*r.*	*p*						
Mogultoor - - - - - -	42,526	0	0	1,56,432	6	3	3	10	10
Woondy - - - - - - -	47,235	0	0	1,45,519	4	5	3	1	3½
Tankoo - - - - - - -	41,786	0	0	1,70,005	7	2	4	1	1
TOTAL - - -	1,31,547	0	0	4,71,957	1	10	3	9	5

I am not at this moment aware of the rates which obtain in other districts of this Presidency, but the average of the talooks of Amalapoor and Nagarum on the other side of the river is also about four rupees. In an able and interesting article upon the land revenue of Madras, in the Calcutta Review for June 1852, I find it stated that the average rent paid to Government in the North West Provinces, on the acres actually cultivated, is, *Rs.* 1. 12. per acre; and that in the Salem district the average is *Rs.* 1. 14. 10. per acre If, therefore, the above table can be depended upon, you will not be surprised at my doubting the possibility of materially increasing the land revenue for the next few years, without bearing too heavily upon the ryots. But the fact is, that the above figures do not represent the entire extent of cultivated and cultivable land in the subdivision, if they did, the villages could not have borne their present burden without a decline of prosperity. In the foregoing calculation, I have allowed eight acres to the pooty as being the general measurement of the country; but in many parts of the district the pooty is much larger. Dotiputtah, for instance, and other Lunka villages, where the puggum of 96 cubits is used, the pooty contains 11 acres; and then, again, no faith can be placed in a mode of measurement which varies in almost every village, so that I have little doubt we shall be under the mark, if we allow at least 50,000 acres in excess of the number entered as actually cultivated; but even with this increase the tax would still be very high.

32. The revenue payable on the Cuttoobady enam lands, the area of which is 16,320 acres, amounts to *Rs.* 22,016. 10. 4.* If this sum be added to the assessment on jeroytee land, the taxation per head will be found to amount to *Rs.* 2. 12. 8. for the year. Continuing the comparison afforded by the paper above referred to, the taxation per head in the North-West is stated to be *Rs* 1. 14, and in the Salem District, *Rs.* 2. 1. 2¼.; and in those calculations, the revenue derived from the abkary and stamps has been taken into account, whereas in mine, every item but the land tax is excluded.

Rs	*a*	*pi*
4,74,957	1	10
22,016	10	4
49 673	12	2

The population of the three talooks by the census of 1851, was 2,01,504.

33. I have already alluded to the reluctance of the ryots to attempt a change of crop from dry to wet; it will not be uninteresting to compare the estimated return of five consecutive years, from dry crops, with a similar return from wet crops, both grown upon irrigated fallow land of the first class:—

Years.	CROP	Dry Land. Nature of Cultivation	Expenses.	Return.	Profit.	——
			R. a. p.	R a. p.	R. a. p	R. a p
1st	Poonasa, black paddy, red grain, cotton.	Turning with crowbar, ploughing.	32 - -	80 - -	—	—
	Pyra, cholum, lamp-oil seeds, Bengal and horse-gram, cotton, &c.	Labourers' hire for sowing, cutting, weeding, &c.	23 8 -	60 - -	—	—
			55 8 -	140 - -	84 8 -	—
2d	- - - - -	- - - - -	20 - -	140 - -	120 - -	—
3d, 4th, and 5th years, at the same rate as the 2d			60 - -	420 - -	360 - -	—
				TOTAL	- - Rs.	564 8 -
	Wet Land:					
1st	White paddy	Ploughing, seeds, labourers' hire for planting, watering, cutting, &c.	25 - -	90 - -	65 - -	—
2d	White small crop of gingily oil-seed.	- - - -	25 - -	120 8 -	95 8 -	—
3d	- - - - -	- - - -	25 - -	169 - -	144 - -	—
4th and 5th years at the same rate as 3d			50 - -	338 - -	288 - -	—
				TOTAL	- - Rs	592 8 -

Note—It may be thought that this comparison tells too favourably for dry cultivation, and it is proper to mention that in support of my argument, I have chosen the best light soil of Tankoo and Mogultoor, and have taken the highest return they have been known to yield in the very best seasons. Had the comparison extended to 10 years, the dry produce would probably have diminished one-half. It must be borne in mind, too, that the certain supply of water ensures a good crop of black paddy and of oil-seeds. An average of 10 rupees the pooty has been taken as the price of the poonasa crop, and 15 rupees for the pyra. The ordinary rates for black paddy is between 7 and 8 rupees, cotton 12, doll 15, and the average selling price of jonna is 12, of oil seeds above 30, and Bengal gram, 20 rupees the pooty

In regard to the second statement, it is to be observed that the price of a pair of bullocks is included in the cost of production of the first year, and that the expenses of the second and following years on irrigated land, are larger than those in the *former* statement, because in the case of converting dry land into wet, the soil, which has been exhausted by the production of dry grains, requires to be well manured to strengthen it for the rice crop.

34. The above results have been obtained from various sources within my reach, and I have no reason to believe that they are materially incorrect. It will be observed that for the first two years the return from dry crops is higher than from wet; that the advantage of white paddy cultivation shows itself in the third year; and that after the lapse of five years, the profit in favour of the wet over the dry crop is less than 30 rupees. The above returns, however, presuppose good seasons, and it must be remembered that if one dry crop is abundant, another is scanty, and that the dry cultivation generally is subject to adverse influences of the weather, from which the wet is secure, and the returns are consequently more precarious.

35. The statement underneath will show the advantage of converting a pooty of unirrigated land into a rice field. Returns are given as above, for five years:—

COMPARATIVE STATEMENT of Expenses and Returns from a Pooty of IRRIGATED and UNIRRIGATED LAND of the First Sort.

Years	Unirrigated Land			Remainder or Profit.	The same Land when Irrigated.				Comparison of Columns 4 and 8.	
	Pooties of Grain on a Pooty of Land.	Value.	Deduct Cost of Production.		Produce of White Paddy per Pooty	Value at Nine Rupees.	Deduct Cost of Production.	Remainder or Profit.	Increase	Decrease.
	1.	2.	3	4	5.	6	7.	8	9.	10
1	10	80	44	36	8	72	44	28	–	8
2	12	110	7	103	10	90	30	60	–	47
3	12	110	7	103	16	144	30	114	11	—
4	10	90	10	80	20	180	30	150	70	—
5	8	72	10	62	20	180	30	150	88	—
									169	55

It will be seen from the above results that although the dry cultivation deteriorates while the wet improves, the ryot loses by the change for the first two years. If it be admitted that the foregoing estimates approach the truth, it is evident that a too sudden rise in the assessment will press very heavily upon the ryots.

36 The following table shows the average assessment per acre of each description of land in the three talooks:—

TALOOKS	AVERAGE, &c			
	Dry	Wet	Garden	Lunka
Mogultoor - - - - - -	3 14 5	2 10 –	7 11 5	9 5 7
Woondy - - - - - - -	2 13 3	3 3 1	—	—
Tankoo - - - - - -	3 14 –	5 1 8	- - -	10 10 7
	3 11 2	3 1 6	7 11 5	9 15 1

It will be observed that the average rent of the dry land in Mogultoor and Tankoo is higher than the average of wet land in Mogultoor and Woondy This is explained by the fact that garden produce, chillies, turmeric, sugar-cane, &c , is grown upon what is entered in the accounts as dry land: cocoa-nuts, mangoes, and betel only being entered as gardens

37. I wish it were in my power to frame accurate returns of the gross value of crops grown on the lands of each talook, or even of a few villages, but so long as it continues to be the interest of the cultivator to conceal the truth, and of the native Government officials to connive at the deception, so long will the estimates furnished to us be deficient, and our returns fictitious. Hence arises the difficulty of determining the true value of an acre of land, and until a new survey and assessment is set on foot, this inconvenience will continue.

38. It does seem to me that no better time than the present could be chosen for the commencement of this long-deferred survey. The country is in a state of transition, the lands require classification, re-arrangement, and fair

distribution; rights have to be confirmed and inequalities removed, and the people are eagerly looking forward to an improvement in the existing state of things; my own opinion is, that if the revenue from jeroyte land were allowed to remain stationary, or nearly so, for two or three years, the people would be stimulated to industry, and induced to attempt every sort of improvement to their lands by manuring and irrigation, which, at the close of that period, would be in a condition to bear a reasonable increase of assessment. On enam lands tirvajasty can be levied forthwith, for they have already participated in, and will continue to receive, the several benefits produced by these Government works. The assessment already fixed by the Collector is one rupee the pooty, and even at this moderate rate, there will be a considerable increase to the revenue from this item alone.

39. Meanwhile, let the survey proceed, let it commence with those villages which have been the first to benefit by the new supply of water, and be thus carried gradually throughout each talook. On the completion of the survey, the lands having been properly classified and their capabilities clearly ascertained, a just and moderate assessment might be imposed which should not be liable to fluctuation, and the ryots being no longer disheartened by the uncertainty of the Government demand, will regard their individual holdings as private property, and the Government revenue will increase as they advance in prosperity.

40. I cannot however, undertake to say that the revenue of the division can increase in the same ratio as heretofore, until the whole of the annicut project be carried through, but that the return will then be amply remunerative, I have not the smallest doubt. The Godavery water has but just reached the lands of Tankoo and Mogultoor, and yet the assessment has increased within the last six years at the rate of half a rupee an acre throughout the three delta talooks of the division.

Fusly.	Price per Madras Garce.					
	White Paddy			Black Paddy		
	Rs.	*a.*	*p.*	*Rs*	*a*	*p*
1251	93	5	-	54	9	-
1252	57	9	3	46	13	5
1253	53	10	8	45	10	3
1254	58	1	4	52	1	5
1255	55	3	2	73	8	8
1256	53	1	10	74	11	8
1257	76	4	-	67	2	-
1258	72	4	-	63	8	-
1259	75	14	-	64	-	-
1260	72	6	-	65	2	-
1261	59	4	8	52	9	4
1262	48	-	-	42	-	-

41. There is one point which I have not yet noticed, but which in all calculations affecting the revenue must be taken into account, and that is, the price of agricultural produce. You will see by the marginal statement, that the prices of paddy have very materially declined, and you will understand that this has been very severely felt, particularly in the talook of Woondy, where, until the last year or two, no other crop could be produced. As the ryot pays the same tax whether the selling price is 10 or 6 rupees, his difficulties are very severe when grain is cheap. This gradual decline of prices therefore must not be overlooked, when we are considering the probability of an increase in the revenue. Cheap food is no doubt a great blessing to the people, and the larger the quantity of rice grown, the cheaper it will be; but to the cultivator who has to meet the Government demand, it is absolutely necessary that the best market should be open to him, and that he should be put in a position to compete with farmers in other parts of the country;'and this brings me to the consideration of the fourth question in your letter

Navigation.

42. I have been favoured by the Collector with the perusal of your memorandum, dated 23d February 1853, referring to an extract from the Minutes of Consultation, dated 13th September 1852. On the subject of the Thooliabaga, the arguments you have used in favour of the completion of the navigation of that canal are equally applicable to all the channels of the subdivision. I have not the means of showing by actual returns, the amount of traffic which has already sprung up on the uncompleted canals on this side of the river, but there cannot be a question of the immense advantage to all classes of the community, from cheap and easy transport which will be afforded by these channels. The importance of the navigation is attested by the eagerness with which the people already avail themselves of the water carriage within their reach, and by the disappointment which they express at the obstacles they necessarily meet with in the present incomplete state of the channels. Many instances have come under my own observation, of the efforts made by the

ryots to carry their produce to the coast, and on several occasions they have applied to me for assistance which I heartily wish it had been in my power to give. That facility of communication creates traffic, is a principle which is universally recognised in civilised countries. Before any project of the kind is undertaken, it seems to me only necessary to inquire, whether the circumstances of a province, and the wants of the population, demand improved communications; and if a reply can be given in the affirmative, an abundant traffic will certainly follow the construction of roads or canals. If again the agricultural products, or the manufactures of any two places be considerably in excess of the demand for home consumption, it is manifestly of the highest importance to the welfare of those two communities, to secure the cheapest and readiest means of an interchange of commodities To deny them all communication, would be to interpose an effectual barrier to their progress, to repress all enterprise and energy, and to withhold from them a most powerful stimulus to industry.

43. Now the majority of the towns and villages in the sub-division are precisely in this condition, they have long groaned, apathetically it may be, under the want of good communications, for there is scarcely a single road throughout the three Delta talooks that deserves the name, and which is not impassable for bandies for more than half the year; and when we add that the population is now rapidly increasing, that there is a large augmentation in the quantity of produce, the cost of which, as you have remarked, diminishes every year, and more than all that the agricultural community are fully alive to the value of improved communications, and are already making every effort to transport their produce to the best market; I think we have a very powerful argument in favour of the speedy completion of these channels, and at the same time, a guarantee that the traffic will exceed any estimate we could now form of its extent.

44. From a paper just furnished to me by Lieutenant Chambers, the executive engineer officer superintending the works on this side of the river, I find that the number of boats which passed through the Vizasevarum Lock in last month (March 1853) was 204, and that the value of rice, oilseeds, and other produce exported during the month, was about 9,000 rupees. Even at this rate the export would amount to 1,08,000 rupees annually, were the channels to remain in their present state, but, when every village is supplied with water carriage for the interchange of traffic, and the navigation is open throughout the district, it may reasonably be expected that these exports will increase to many times that amount.

Since writing this I have learnt that the value of the exports from the western Delta talooks for the month of April 1853, amounted to 40,000 rupees, of which 14,000 was the value of the grain, and 21,000 the value of the jaggery. In May the value of exports was 56,000 rupees.

45. Cocanada must continue to offer the best market for rice, oilseeds, grain, &c., as from the demand by English merchants and the facility it offers to the shipping, there is no other port to compete with it; much of the produce of the sub-division, however, will find its way to Masulipatam, to Elloor and to Nursapoor, where the decline of trade may be greatly attributed to the want of proper communications. I cannot consider that Nursapoor has been fairly treated in this matter. Deprived by the construction of the annicut of the direct river communication to Rajahmundry, which was formerly open (at any rate) a great part of the year, this town has not yet been indemnified for so great a loss and inconvenience to its trade by the completion of a single navigation channel for the conveyance of exports and imports. The Nuckkala channel is now open, it is true, but the navigation is uncertain and imperfect, and I cannot too strongly urge the early completion of this and the Gosta Nuddee line.

46. The following is a statement showing in a clear point of view the advantages of water carriage from different parts of the sub-division

Comparative Statement of the Expense of Land and Water Carriage for Short and Long Distances in the Sub-Division of Rajahmundry.

Number.	To and from what Place VILLAGES. 1.	Distance in Miles. 2.	ARTICLES. 3	Land. Hire Paid for Bullocks, &c. per Pooty. 4.	Water. Hire for Dhoonies at Present. 5.	Water. Probable Price when Channels are Full. 6.	Rate per Mile, Water. Land. 7	Rate per Mile, Water. Cost at Present. 8.	Rate per Mile, Water. Probable Cost in Future. 9.	REMARKS.
1	From Woondy to Cocanada on Gosta Nuddee.	70	Paddy - - -	8 - -	3 - -	- 14 -	- 1 10	- - 8	- - 2⅖	
2	From Woondy to Elloor on Colair.	40	Ditto - - -	4 - -	1 - -	- 6 -	- 1 5	- - 4	- - 1½	
3	From Palaveram to Woondy on Gosta Nuddee.	60	1,000 bamboos, including the water carriage on the Godavery.	19 - -	9 - -	2 - -	- 5 1	- 2 5	- - 6½	The price of 1,000 bamboos at Palaveram is six rupees, the former selling price at Woondy was 25 rupees; and is now 15 rupees. The difference between the cost and selling price is put down as the hire for carriage.
4	From Samulcottah to Rajahmundry.	55	Per candy of 20 mds.	2 - -	1 - -	- 8 -	- - 7	- - 3½	- - 1¾	The great market for this article is Vizasevarum, where the price fluctuates from 40 to 50 rupees the candy; none but the richest ryots can afford the land carriage from Rajahmundry. Local purchases are made from the poorer class at from 15 to 20 rupees the candy, and the profit to the soucar is at least 50 per cent.
5	From Tankoo to Nursapoor on Palacole Channel	25	Bengal and horse gram oil seeds, &c.	2 8 -	- -	- 8 -	- 1 7	- -	- - 4	Too high.
6	From Woondy to Nursapoor.	20	Paddy - - -	2 - -	- -	- 4 -	- 1 7	- -	- - 2½	
7	From Palacole to Nursapoor.	6	Bengal and horse gram oil seeds, &c.	- 12 -	- 4 -	- 2 -	- - 8	- -	- - 4	This estimate is probably too high.
8	From Nursapoor to Rajahmundry	45	Bearers for two native palakees, 10; cavademen, two.	12 - -	3 - -	- -	- 4 3	- 1 1	- -	Small dingies, capable of holding six or eight persons, have been hired at this rate, to convey court-suitors, traders and their attendants, from Nursapoor to Rajy, on the Palacole Channel. This communication being now closed, the unkkala is used instead. The comparison includes two palakees only for the heads of the two families, and the expense by water is one-fourth. Large quantities of jaggery are sent to the Rajahmundry sugar works, and the demand for this article will probably increase very considerably. The superintendent of Messrs. Arbuthnot & Co.'s factory is so sensible of the value of water carriage, that he has already constructed a number of boats for the conveyance of the supply of this article to Rajahmundry, and of sugar, &c. to the coast.
9	From Nursapoor to Chettypett.	36	Jaggery - - -	- 12 -	- 3 -	- 3 -	- - 4	- -	- - 1	

47. I repeat with confidence that the people are all prepared to take immediate advantage of these improvements for their benefit, that they ask nothing better than that the means be afforded them of making their own terms with the purchasers of their produce, and many of them will build their own boats, as soon as they know that the navigation is certain. In many parts of the Woondy talook, when the price at Cocanada was 10, and at Bunder 11 rupees, the ryots were obliged to give their paddy to the soucar for six and seven rupees the pooty, to enable them to meet their heaviest kists, solely because there was no local demand, and they could not afford to send it to a distance; the same might be said of almost every description of produce; the ryot parts with it at a ruinous sacrifice, and the soucar is enriched at his expense.

48. It is in this way that prices affect the revenue. when the ryot can himself transport his produce at a trifling expense to the best market and feel himself independent of the soucar, his returns will be increased 50 per cent, and his kists paid with ease. It does appear to me to be very hard, that, after all other restrictions upon commerce have been removed, the ryot should be still compelled to deal with the local merchant, because we virtually deprive him of access to the best market, and of the means of obtaining the full price of the produce of his industry.

49 I have not yet alluded to the new and abundant supply of river water for men and cattle, which is now conveyed to villages where the want of it was before severely felt, and which has contributed so largely to the comfort and happiness of thousands of the people. This blessing can only be properly estimated by those who have benefited by the change, and I can testify that by them, at all events, it is fully and gratefully appreciated.

50. But the interest and importance of the whole subject have carried me on, and this letter has already far exceeded the limits I intended. I will, therefore, now close my remarks with the expression of a hope, that no further delay may occur in the prosecution of any of the works which form a part of your noble project.

I have, &c
(signed) *G. N. Taylor*,
Sub-Collector.

Samuldive, 4 May 1853.

(True copy.)

(signed) G. N. Taylor,
Sub-Collector in Charge.

REPORT on the Direct and Indirect Effects of the Godavery Annicut, in the Talooks of the Collector's Division, in the District of Rajahmundry

Para 1. IN a former paper it was attempted to show that the increase of revenue in the sub-division was due mainly, if not entirely, to the Annicut works. It was not meant to be affirmed that no other causes whatever had contributed to produce the enhanced and still growing prosperity of the province. The introduction of a more healthy system of revenue management, the striking off of heavy balances of former years, hopeless of realisation, while they pressed a sore burden on the people; larger and more certain protection to life and property, by improvement in the police; all these measures have, without doubt, powerfully affected the happiness of the people; and while fostering the steady increase of private property, have enabled the whole population to pursue their ordinary occupations, whether of agriculture or of trade, with a feeling of greater confidence, and with a surer knowledge that they will reap the fruits of their labour, than they ever possessed before. It was not contended that the labours of the revenue officers, the activity and vigilance of the magistrate, combining fiscal and police improvements, had accomplished nothing; it was simply stated, that, under the operation of certain natural causes, the most vigorous administrator of the most perfect revenue system could not have extracted from the soil the amount of produce, nor realised from the ryot the aggregate collections of the last six years, without the aid of the scientific public works projected by the engineers.

2. It was argued that if the floods of 1843 had caused a certain amount of damage to produce and property, and a consequent loss of revenue to Government, the probability was, that the higher floods of the subsequent years of 1849 and 1853, would have occasioned much greater loss, had no human means been employed to check or mitigate their ravages. The ability of the Collector, and his improved revenue management, were not called in question; the security of the revenue was attributed to the natural operation of cause and effect. It was shown that the annicut and its subsidiary works had averted destruction which could not otherwise have been prevented, and credit was fairly given to it for the gain to the Government exchequer. It was not pretended that the same results would have been obtained under inefficient management, nor even that the land revenue would have declined, if no public improvements had been effected; but it was argued that the successful efforts of the Collector for a series of years to raise the revenue and to further the prosperity of the country might have been rendered fertile, as they had been before, by disasters which were beyond his power to control, but which have been averted by the Godavery works.

3. This argument I now propose to apply to the talooks of the principal division, which are under the immediate management of the Collector. It must be observed, however, at starting, that in the Collector's division, there is a much larger proportion of Government territory above the influence of the Godavery annicut than in the sub-division; that the soil of those talooks is perhaps the richest in the district, and that a very considerable portion is irrigated by the unfailing water of the Yalairoo, and other hill streams, which in ordinary seasons copiously supply the tanks and natural reservoirs, so that the comparison will not tell so favourably for the tract irrigated by the annicut. For the sake of uniformity, I propose to take the same years and the same periods as were used for the purpose of comparison, in the paper regarding the effect of the annicut on the talooks of the sub-division.

4. The following statement shows the increase of kist in fusly 1262 over fusly 1256 in the lower talooks of the Collector's division, distinguishing the assessment of the lands within the influence of the annicut, and of those which are beyond its reach.

STATEMENT showing the Increase of KIST in the Talooks of the Collector's Division of the *Rajahmundry* District, which are capable of Irrigation.

—	TALOOKS	BERIZ OF FUSLY 1256			Beriz of Fusly 1262	Deduct Kist of Land, out of reach of Irrigation by Godavery	Remainder Kist of Land, within influence of Annicut.	INCREASE		TOTAL Income between 4 and 5.
		Kist of Land, within the influence of Annicut	Kist of Land, beyond reach of Annicut.	TOTAL.				Comparison between 3 and 6.	Comparison between 2 and 7	
	1.	2.	3	4	5.	6.	7.	8.	9.	10.
1	Amalapoor - -	1,28,860	- -	1,28,860	1,48,454	- -	1,48,454	- -	19,594	19,594
2	Nagarum - -	88,182	- -	88,182	1,06,395	- -	1,06,395	- -	18,212	18,212
3	Rally - - -	65,945	18,010	83,955	88,520	19,664	68,856	1,654	2,910	4,564
4	Kota Ramachendrapuram.	1,10,593	- -	1,10,593	1,50,764	- -	1,50,764	- -	40,171	40,171
5	Bickavole - -	84,969	- -	84,969	1,21,044	- -	1,21,044	- -	36,074	36,074
6	Kapaverum - -	73,454	63,976	1,37,430	1,70,125	82,759	87,365	18,783	13,911	32,695
7	Undrunghy, &c., in Cocanada division.	2,411	- -	2,411	2,710	- -	2,710	- -	298	298
		5,54,417	81,986	6,36,403	7,88,015	1,02,424	6,85,591	20,437	1,31,173	1,51,611

5. The comparative beriz in fusly 1256, and 1262 of the upper talooks, or those entirely out of reach of the annicut water, is shown below.

STATEMENT showing the Increase of KIST in those Talooks of the Collector's Division, which are not capable of Irrigation.

—	TALOOKS	Beriz of Fuzly 1256	Beriz of Fuzly 1262.	Increase	——
1	Peddapoor - - - - - - - -	37,674	44,003	6,129	
2	Rajahmundry - - - - - - -	39,434	42,716	3,282	
3	Kottapilly - - - - - - - -	39,981	57,840	17,859	
4	Lingumpurroo - - - - - - -	18,469	26,753	8,285	
5	Wooppada, &c. - - - - - - -	3,081	4,146	1,064	
6	Coringa - - - - - - - -	31	*31	- - -	* Quit rent.
		1,38,870	1,75,489	36,619	

6. The following is a statement of the actual land revenue collections of the same portions of the district respectively, for a period of 12 years, exhibiting a comparison between the six years preceding, and the six years subsequent, to the commencement of the annicut works.

DELTA TALOOKS.

	TALOOKS.	BEFORE THE COMMENCEMENT OF ANNICUT							AFTER THE COMMENCEMENT OF ANNICUT.						
		Fusly 1251.	Fusly 1252	Fusly 1253.	Fusly 1254	Fusly 1255	Fusly 1256	TOTAL.	Fusly 1257	Fusly 1258	Fusly 1259	Fusly 1260	Fusly 1261	Fusly 1262.	TOTAL
1	Amalapoor - - - - - -	1,10,338	1,09,045	1,09,082	1,17,777	1,28,276	1,30,211	6,97,729	1,34,478	1,36,522	1,29,364	1,37,603	1,43,181	1,44,266	8,25,414
2	Nagarum - - - - - -	82,650	81,472	67,019	80,112	84,438	86,368	4,82,059	90,873	95,043	93,611	99,956	1,02,464	1,01,616	5,83 563
3	Rally - - - - - - -	67 776	67,339	59,375	74,637	78,092	83,956	4,31,175	86,866	88,500	83,786	89,644	88,372	85,949	5,23,117
4	Kota Ramachendrapurum - -	1,16,351	1,16,351	1,16,351	1,14,642	1,16,130	1,30,054	7,09,879	1,35,253	1,39,284	1,20,329	1,39,151	1,45,994	1,42,001	8,22,012
5	Bickavole - - - - - -	88,144	88,144	88,144	88,144	88,144	85,272	5,25,992	88,351	1,02,314	1,04,671	1,14,496	1,19,638	1,16,743	6,46,213
6	Kapaverum, 27 villages - - -	60,678	60,678	60,678	62,178	58,955	68,045	3,71,212	76,806	80,158	82,085	84,131	86,704	87,366	4,97,250
7	Undrunghy - - - - - -	1,841	2,012	1,386	2,088	1,524	2,411	11,262	2,511	2,556	2,436	2,576	2,680	2,641	15,400
	TOTAL - - -	5,27,778	5,25,041	5,02,035	5,39,578	5,48,559	5,86,317	32,29,308	6,15,138	6,44,377	6,16,282	6,67,557	6,89,033	6,80,582	39,12,969
							Average - - -	5,38,218						Average - - -	6,52,161

TALOOKS ABOVE THE ANNICUT.

	TALOOKS.	BEFORE THE COMMENCEMENT OF ANNICUT							AFTER THE COMMENCEMENT OF ANNICUT						
		Fusly 1251	Fusly 1252.	Fusly 1253.	Fusly 1254	Fusl y 1255	Fusly 1256	TOTAL.	Fusly 1257.	Fusly 1258	Fusly 1259	Fusly 1260.	Fusly 1261.	Fusly 1262	TOTAL.
1	Peddapoor - - - - - -	29,038	29,038	29,038	29,038	29,038	37,405	1,82,595	40,746	42,480	42,654	43,370	42,829	44,003	2,56,082
2	Kapaverum, 66 villages - -	61,435	59,263	61,029	56,145	53,217	63,885	3,54,944	66,569	69,910	71,544	74,362	76,708	82,759	4,41,852
3	Kottapilly - - - - - -	36,259	32,629	35,058	37,017	37,178	39,982	2,18,123	42,015	44,857	45,265	49,521	56,130	57,735	2,95,523
4	Lingumpurioo - - - - -	17,696	17,696	17,696	17,696	17,696	14,210	1,02,690	15,882	16,871	17,585	20,391	20,822	21,089	1,12,640
5	Rajahmundry - - - - -	35,699	35,699	35,699	35,699	36,099	39,223	2,17,025	41,205	41,478	38,353	43,426	42,109	30,940	2,37,511
6	Wooppada, &c. - - - - -	405	1,403	1,796	1,796	3,000	3,082	12,532	3,165	3,250	3,487	3,650	4,071	4,138	21,761
	TOTAL - - -	1,80,532	1,75,728	1,80,316	1,77,348	1,76,228	1,97,757	10,87,909	2,09,582	2,18,846	2,18,888	2,34,720	2,42,669	2,40,664	13,65,369
							Average - - -	1 81,318						Average - - -	2,27,561

ABSTRACT.

FUSLIES	DELTA TALOOKS.			TALOOKS ABOVE THE ANNICUT.		
	Collection.	Increase	Decrease	Collection.	Increase	Decrease.
		Comparison with Fusly 1251.				
	Rs	Rs.	Rs.	Rs.	Rs.	Rs
1251	5,27,778	- - -	- -	1,80,532	—	—
1252	5,25,041	- - -	2,737	1,75,728	- - -	4,804
1253	5,02,035	- - -	25,743	1,80,316	- - -	216
1254	5,39,578	11,800	- -	1,77,348	- - -	3,184
1255	5,48,559	20,781	- -	1,76,228	- - -	4,304
1256	5,86,317	58,539	- -	1,97,757	17,225	—
		91,220	28,480		17,225	12 508
		Comparison with Fusly 1256				
1257	6,15,138	28,821	- -	2,09,582	11,825	—
1258	6,44,377	58,060	- -	2,18,846	21,089	—
1259	6,16,282	29,965	- -	2 18,888	21,131	—
1260	6,67,557	81,240	- -	2,34,720	36,963	—
1261	6,89,033	1,02,716	- -	2,42,669	44,912	—
1262	6,80,582	94,265	- -	2,40,664	42,907	—
		3,95,067			1,78,827	

7. The aggregate increase in the former is nearly 6 lacs, and in the latter a little more than 2 lacs of rupees; the per centage to the revenue of the two parts of the district being very nearly equal From this it might be argued that as the increase in the one case is as conspicuous as in the other no credit can be taken for the annicut, similar results having been obtained without its influence. In order to a proper understanding of the subject, it will be better to give a brief explanation of the peculiar circumstances of each talook in support of the remark which was made in para. 3.

8. The talook of Cottapilly is lightly assessed, possesses a peculiarly rich soil, and in ordinary years the tanks are well supplied with water for irrigation. It came under Government management in fusly 1251; the revenue advanced only 3,000 rupees during the first period, but is now nearly 18,000 rupees higher than it was in fusly 1256. Formerly subject to the incursions and depredations of marauders and freebooters, its present prosperity may fairly be ascribed to the improved management and the successful efforts of the late Collector and Magistrate, by whom the successive outbreaks of the rebels were quelled, and the Revenue system put upon a better footing.

9. The same may be said of the adjoining talook of Lingumpunoo, which borders the hill country of Vizagapatam. It fell to Government in fusly 1256, and the collections of that year fell short of the peishcush by 3,000 rupees. The revenue has gradually advanced, as might have been expected after its lapse to our rule, and it now exceeds the permanent assessment by about the same amount. The most important villages in this talook are watered by the only large tank in the district, which is fed by streams from the hills.

10. Peddapoor, in like manner, came under Government management in fusly 1256, and the collections exceeded the peishcush in the first year by

8,000 rupees; and in the course of a further period of six years the annual revenue has increased from 37 to 44,000 rupees. This talook is irrigated from the Yalairoo, whose waters are distributed by various natural and artificial channels, and by means of dams and calingulas, and are made to fertilise the largest extent of sugar cultivation in the district. Under these circumstances the increase of revenue is not very remarkable.

11. The talook of Rajahmundry is very differently situated; without irrigation of any sort its produce is chiefly cholum and other dry grains. Its revenue, which in fusly 1252 was 35,000 rupees, and had amounted in fusly 1256 to 39,000 rupees, is now, in 1262, reduced to 31,000 rupees.

12. Capaveram is the only remaining talook requiring notice. A portion of this talook is irrigated from the Godavery, but the increase in the villages not irrigated amounts to nearly 20,000 rupees. This is without doubt one of the finest talooks in the district, but is comparatively lightly assessed, and the enhanced collections are in no small degree owing to the expenditure of public money, for, being conveniently situated, many thousands of its population were constantly employed.

13. It is seen, therefore, that the average collections from the talooks composing the tract beyond the reach of the annicut, which during the first period comprised in these statements amounted to 1,83,098, had increased during the second period to 2,35,000. It is admitted that this gradually progressive increase, though no doubt assisted by the life and energy infused into the people by public expenditure, and by the circulation of money produced by the large sugar works at Rajahmundry, is mainly and justly due to improved management, and better protection to life and property. It will be observed that, as each estate or talook lapsed to Government, the revenue recovered itself after the first year, and except in the case of Rajahmundry, progressively rose to the last year of the series, without break or check of any kind, until in almost every instance it far exceeds the permanent peishcush. This ought to be the natural result of an improved system of management in any portion of a province, favoured as this has been with a succession of propitious seasons, and exposed to no calamitous visitations impossible to control, or to the miseries of drought and famine.

14. Turning now to the statement of collections in the Delta talooks we shall be able to note the comparative progress of the revenue in that part of the district which is exposed to the inundations of the Godavery. In para. 6 of the foregoing paper, on the effects of the annicut in the subdivision, mention is made of the disastrous floods of fuslies 1253 and 1259; the losses occasioned by those inundations are no less conspicuous in the statement now before us. In the talooks of Ramachendrapoor, Bickavole, and Capavarem no check is discernible, because the peishcush was collected whatever the loss to the then proprietors may have been: but in Amlapoor, Nagarem, and Rally, it will be observed that the loss of revenue was considerable; and we find by the abstract statement following, that the collections fell short of fusly 1251 by 25,000 rupees. The talook of Nagarem, which suffered most from the uncontrolled floods of the river, did not retrieve its losses till the second year, and in fusly 1256 we find that its revenue is barely 4,000 rupees in advance of what it was in fusly 1251. The reaction upon two of the talooks which paid their full peishcush in 1253 is also worthy of remark. Cotaramachendrapoor did not recover itself for several years; although under Government management, even the peishcush was not realised in fusly 1254; the collections barely reached that amount in fusly 1255, and the estate escheated to Government in fusly 1256. In Biccavole, the revenue of fusly 1256 was 2,000 rupees below the peishcush in fusly 1251, and in 1255 the collections of 27 villages of Kapaveram (now watered) were 2,000 rupees below the same standard.

Fusly 1251 - 82,650
„ 1256 - 86,368
3,718

15. Glancing through the above statement to fusly 1259, the same check and loss to the revenue is again remarkable. Instead of the progressive advance hitherto made it recedes nearly 30,000 rupees, as compared with the previous year; the diminution in the first four talooks being more than 33,000 rupees; while

Fusly 1258, 6,44,377
„ 1259, 6,16,282
28,095

while Biccavole and the Delta portion of Kapaveram exhibit a small increase in consequence of direct irrigation derived from the annicut.

16. Looking further on, to the column of figures representing the collections for fusly 1262, we find the progress of the revenue arrested indeed, but to a comparatively trifling extent; the actual collections were only 8,000 rupees less than in the preceding fusly. Although the figures in the present instance do not present so strong a contrast as in the case of the talooks of the subdivision, which suffered more from inundation, still they are sufficiently significant, and the result is similar. It seems almost unnecessary to argue that if, out of a revenue of little more than 2¼* lacs, a deficit of 25,000 or ⅛th is caused by river floods, some credit is due to the works, which, in their incomplete state, enabled the realisation of more than 6 lacs, with a loss of only 30,000 ($\frac{1}{20}$th), and which, when nearer to completion, secured the collection of more than 6¾ lacs, with a loss of 8,500 ($\frac{1}{80}$th); notwithstanding that in the two latter years the inundations were as high, and if entirely uncontrolled would probably have been more destructive in their effects than they ever had been before.

6,39,033
6,30,582
8,451

	F. 1253
Amlapore,	1,09,082
Nagaram -	67,019
Rally -	59,375
	*2,35,476

17. It is not fair there to compare two parts of the same district which are so totally different, both in their natural position and with respect to the peculiar influences which are brought to bear upon them, and to say that the prosperity of the people and the security of the revenue are as little due to the annicut in the one case as in the other. It seems to me, on the contrary, that we ought in all honesty to confess that without the relief and assistance afforded by these works, in the way of circulation of money, protection from floods, and improved irrigation, we should have been utterly unable to realise the enhanced demand of the last six years in the lower talooks of the district, and to show an aggregate surplus of nearly 4 lacs of rupees within that period, to compare with 62,000, the increase of the six years preceding the commencement of the annicut, and most of which is due to the last year of the series, fusly 1256, in which the annicut was commenced.

18 It is of course quite impossible to say how much of this 4 lacs can be directly attributed to the effect of the annicut, because the value of produce saved, the loss and suffering averted from the population, could not be calculated, nor can I hazard a guess as to the amount which might have been realised if these works had not been executed. One assertion, however, can be made without the smallest reserve or hesitation, and that is, if no public works had been undertaken for the improvement of the Delta talooks of this district, the revenue officers would have had greater difficulty in realising during the last six years the average collections of the former series of years (5,38,000) than they have actually experienced in collecting an average revenue of 6½ lacs.

19. As in the case of the subdivision, therefore, I assume the whole of this increase as due to the annicut, and make the distribution of the amount as shown in the subjoined table, which is an abstract of a separate statement, containing the particulars of each village of every talook.—

Number.	TALOOKS. 1.	Permanent Beriz. 2.	Highest Collection. 3.	Lowest Collection 4.	Average Collections from Fusly 1251 to 1255. 5.	Collection of Fusly 1256 6	Collection of Fusly 1262. 7	Comparison between Columns 6 and 7. Increase.	Comparison between Columns 6 and 7. Decrease. 9
		Rs.	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*
1	Amlapoor - - - - -	1,38,378	2,20,854	82,359	1,10,265	1,30,211	1,44,266	19,218	5,163
2	Nagaram - - - - -	1,09,931	1,55,927	59,065	78,169	86,367	1,01,616	16,286	1,038
3	Rally - - - - -	69,410	1,19,527	57,159	71,817	83,956	85,949	6,103	4,109
4	Cota Ramachendrapooram -	1,16,741	2,03,884	95,046	88,567	1,30,054	1,42,001	19,180	7,233
5	Biccavole - - - - -	88,165	1,57,684	64,488	64,407	85,272	1,16,743	36,058	4,587
6	Undranghy - - - -	3,462	4,920	1,309	1,783	2,411	2,641	230	- -
7	Kapaveram, 27 villages -	60,678	1,07,339	56,632	64,324	68,045	87,366	19,551	230
	TOTAL - - -	5,86,765	9,70,135	4,16,058	4,79,332	5,86,316	6,80,582	1,16,626	22,360

Number.	TALOOKS	INCREASE OF COLLECTION FROM FUSLY 1257 TO 1262 OVER 1256								Average Collection previous to Fusly 1256.
		Increase					Decrease.			
		Increase from Fusly 1257 to 1259, Profit by general Expenditure	Profit from Irrigation from 1260 to 1262 inclusive			TOTAL of Columns 10 and 13.	From Fusly 1257 to 1259.	From 1260 to 1262 Fusly.	TOTAL	
			By Embankment, Drainage, and continued Expenditure of Money	By Supply of Water.	TOTAL.					
		10.	11	12	13	14	15.	16	17	18.
		Rs.	*Rs.*	*Rs*	*Rs*	*Rs.*	*Rs*	*Rs.*	*Rs*	*Rs.*
1	Amlapoor - - -	22,981	47,405	- -	47,405	70,386	13,239	14,324	27,563	1,05,384
2	Nagaram - - -	22,526	46,992	- -	46,992	69,518	2,009	2,042	4,051	73,904
	Rally - - - -	11,624	21,243	- -	21,243	32,867	4,328	8,255	12,583	91,128
4	Cota Ramachendrapooram	41,630	53,563	- -	53,563	95,193	20,961	13,161	34,122	1,28,689
5	Biccavole - - -	60,419	1,01,163	32,637	1,33,800	1,94,219	18,176	11,650	29,826	64,407
6	Undranghy - - -	409	663	- -	663	1,072	- -	- -	- -	1,147
7	Kapaveram, 27 villages	34,916	30,867	24,628	55,525	90,441	1,253	973	1,926	60,939
	TOTAL - - -	1,94,505	3,01,926	57,265	1,61,653	5,53,696	59,966	50,105	1,10,071	5,25,897

Explanatory figures and remarks might here be added similar to those contained in para. 6 of the former paper on the subdivision; but it is unnecessary to exemplify by further facts what is already sufficiently palpable.

20. It will now be proper to show what has been the increase of revenue in that part of the district where extra assessment has actually been imposed, in consequence of improved irrigation from the annicut. This had only been the case, in fusly 1262, in 30 villages of Biccavole, and seven villages of Kapaveram,

watered by the Samulcotta and Thooliabhaga channels. Hitherto we have been considering the general effects produced upon the district by the annicut works. The revenue has been secured by the combined assistance of river embankments, drainage, expenditure of money, abundant and certain, instead of a precarious supply of water to rice crops (as in Woondy), and the timely irrigation of valuable dry grains, but now we have before us the effect of a change from dry to wet cultivation, in a part of the district which has benefited by annicut channels for several years.

STATEMENT showing the LAND REVENUE Collections, from Fusly 1251 to 1262, of the Villages in *Kapaveram* and *Beccavole*, which have been irrigated by the Annicut since 1257.

Fushes	Collection	Increase	Decrease	Fushes	Collection	Increase	Decrease
	Comparison with Fusly 1251.				Comparison with Fusly 1256		
	Rs	*Rs*	*Rs*		*Rs*	*Rs*	*Rs*
1251	64,519	—	—	1257	80,620	8,268	—
1252	54,179	- -	10,340	1258	93,490	21,138	—
1253	63,112	- -	1,407	1259	1,00,589	28,237	—
1254	68,622	4,103	—	1260	1,09,557	37,205	—
1255	51,742	- -	12,777	1261	1,14,500	42,148	—
1256	72,352	7,833	—	1262	1,14,654	42,302	—
		11,936	24,524			1,79,298	

21. Compare with this the collections of the same period, in the remaining talooks of the district in the collector's division.

STATEMENT showing the gross LAND REVENUE Collections of the rest of the Collector's Division not perfectly irrigated by the Annicut, from Fusly 1251 to 1262

Fushes	Collection	Increase	Decrease	Fushes	Collection	Increase	Decrease
	Comparison with Fusly 1251				Comparison with Fusly 1256		
	Rs	*Rs.*	*Rs*		*Rs*	*Rs*	*Rs*
1251	6,43,791	—	—	1257	7,44,100	32,378	—
1252	6,46,590	2,799	—	1258	7,69,733	58,011	—
1253	6,19,239	- -	24,552	1259	7,34,581	22,859	—
1254	6,48,304	4,513	—	1260	7,92,721	80,999	—
1255	6,73,045	29,254	—	1261	8,17,202	1,05,480	—
1256	7,11,722	67,931	—	1262	8,06,592	94,870	—
		104,497	42,552			3,94,597	

22. In the former case a capital of 72,000 rupees* has been so improved, as to produce in the course of six years an accumulated interest or profit of 1,80,000; but in the latter, a capital of 7,12,000 has gained no more than 4 lacs, whereas put out to the same advantage it ought to have realised 18 lacs. Again, this 72,000 rupees, in the lapse of six years, has become 1,15,000; whereas the 7,12,000 of the second statement, has reached only 8 lacs, though, improved in the same proportion, it ought to have become 11¼ lacs. Once more: the capital in the one case has increased in a ratio more than four times greater than in the other; for, as 72,000 : 42,000 : : 7,12,000 : 4,15,000; but instead of being 4,15,000, the increase in the latter case is only 95,000

---

* Collections of Fusly 1256 72,352.
Increase, 1,79,298
Collection of Fusly 1256 7,11,722
Increase, 3 94,597-72,000 — 1,80,000 — 7,12,000--17,80,000
Collection in Fusly 1262 114,654
72,000 1,15,000 7,12,000 11,37,000.

F	1262 - - - -	1,14,654
„	1256 - - - -	72 352
		42,302
F	1262 - - - -	8,06 592
„	1256 - - - -	7,11,722
		94,870

This argument need not be carried further in order to prove the value of improved and certain irrigation.

23. It must not be expected that the assessment of every acre of land in the Delta will eventually rise in the same proportion as the revenue derived from the lands already irrigated by the Samulcotta and Tholiabhaga channels. The Delta has not been accurately surveyed and levelled in every part, so that nothing more would be required than to conduct the water to the land, in order to ascertain at once the degree of benefit which has accrued to the ryots, and the profit which ought to be returned to the State. Our information with respect to produce, area, and difference of soil is admitted to be still imperfect; and nothing has yet been done towards fixing a uniform higher rate of assessment upon lands which have benefited by annicut water. Therefore it is that we find it impossible to calculate, with any approach to accuracy, the money value of the improvements which have been effected. The benefits which have resulted to the population are, in point of fact, incalculable; while at the same time their hitherto uncertain and precarious nature has rendered it impossible to demand a direct return to Government in the shape of increased assessment. The Government right to a share of the profits obtained by the people has never been lost sight of, however, while the policy of moderation and liberality has been upheld; and the subject of the imposition of Teerwajasthi on all lands watered by annicut channels, has engaged the attention of the local revenue officers, and of the Commissioner for the Northern Circars. An extract from a letter, addressed by me to the late Collector in May last, will best explain my view of the matter:—

"In my letter to Colonel Cotton, late chief engineer, dated 4th May 1853, I endeavoured to show that the utmost caution would be necessary in raising the assessment in the talooks of the subdivision, in consequence of the improved means of irrigation; and I stated my opinion that, in order to stimulate the industry of the people, and induce them to attempt every sort of improvement to their land, it would be advisable to confirm the existing rates for a period of two or three years; to give them, in short, for the present at any rate, a permanent demand, sufficiently favourable to tempt them to take advantage of the water within their reach, and such a certainty of our moderation as would enable them to undertake the expense of superior culture, with immediate benefit to themselves and without apprehension for the future.

"Subsequent observation has not induced me to alter this opinion. It will cost the Government positively nothing to be generous at a time like this; on the contrary, it will be clear gain. The more we give up to the ryots now, the more we shall eventually receive. The State can well afford to forego for a time a direct return, in the shape of increased land tax, for expenditure in improving the resources of the soil. The interest for capital expended in the construction of the annicut and the distribution of water throughout the Delta, is amply realised in an increase of the indirect sources of taxation. Large exports, well-stocked markets, circulation of money, brisk trade, and a greater consumption of home products and foreign manufactures; these are indications of prosperity which may already be discerned, and which will be more striking as the means of easy transit are improved and extended; but we look in vain for that general, unmistakeable improvement in the condition of the ryots, which such a state of things might have been expected to produce. The Commissioner has truly described the causes which have hitherto operated to check the extensive use by the ryots of the means of irrigation placed within their reach. It is impossible to overrate the feeling of uncertainty which prevails throughout the district. In many parts they are already depressed by an assessment, which, compared with the average* rates obtaining in other provinces, is very high; and the necessity of continuing advances for cultivation would seem to indicate that, with a large body of the ryots at any rate, there can be nothing approaching to wealth or easy circumstances.

"It should also be borne in mind that the operations of the engineer department have not been productive of unmixed good, event in the most improved villages. In carrying out a complete system of irrigation for the entire Delta, the interests of individual villages are sometimes unavoidably sacrificed to the general good. The arrangements are still incomplete and imperfect, and the benefits uncertain and precarious. Bunds, which have hitherto served to confine the water required by individual villages, are removed, because they intercept the natural drainage of the country, and a great portion of the Delta land is now deprived of the rich alluvial deposit brought by the floods of the Godavery, whose waters are confined within the high embankments which run along its sides. To many of the villages so situated it has not been possible to conduct the water of the annicut by newly-formed channels. The interference, too, with the ordinary habits and pursuits of the people, the various innovations to which they are not easily reconciled, the mere presence of an engineer encampment in every part of each talook; the various wants, wishes, and requirements which have to be met and satisfied, and the secret exactions by the tribe of native goomastahs and peons employed in all directions, to which, notwithstanding the vigilance of the European officers, the ryots are necessarily exposed, all these circumstances have contributed to cause the people to regard a change in their prospects with a feeling of distrust, and the proceedings of the engineer department often with fear and distaste Happily for them, the efforts of the civil engineer, who has the general control of the works, have been constantly directed to ensure the kind and considerate treatment, by his subordinates, of the native inhabitants of all grades; but there is naturally a want of sympathy on the one hand, and an absence of that confidence on the other, which long and intimate intercourse can alone remove.

---

* *Vide* para. 31 of the previous paper on Subdivision.

"I have wished to put these matters in the strongest possible light, because it appears to me that it is only with a most careful consideration of all the influences which have been brought to bear upon the ryots, that the subject of Teerwajasthi ought to be approached. Having had these difficulties to contend with, it seems to me that we ought most carefully to abstain from still further disheartening them by any measure calculated to increase those difficulties."

24. The arrangements recommended by myself have been approved, and active measures are now in operation for assessing with Teerwajasthi, at the ensuing jummabundy, lands of every description which have enjoyed annicut water for two years. A notification, issued to every village in the Delta, tells the people what they have to expect; and proprietors and enamdars will be called upon to pay for the benefits which they have received at the sole cost of Government.

25. The following statement will be found to contain some information of a useful nature, as explaining the inequalities which prevail in the assessment in different parts of the district, and showing that the remarks in the paper, regarding the subdivision, are equally applicable to the talooks of the Collector's division:— Para 20.

	TALOOKS	No of Villages	Permanent Beriz	Population.	Total Extent of Amarkum Land in Fusly 1264								
					Dry.			Wet			Garden.		
					Land	Kist	Average rate per Acre	Land	Kist.	Average rate per Acre	Land	Kist	Average rate per Acre
	1.	2.	3	4.	5	6	7.	8.	9	10.	11	12	13
					Acres	*Rs*	*Rs*	*Acres*	*Rs*	*Rs*	*Acres*	*Rs*	*Rs*
1	Amalapoor - - -	80	1,43,378	72,162	17,102¾	64,224	3¾	17,122¾	57,716	4	421¼	1,584	4⅜
2	Nagarum - - -	48	1,09,381	52,104	17,203	65,311	4	8,666	32,353	4½	376	2,063	5½
3	Rally - - - -	40	69,871	43,979	12,726	53,910	4½	475	1,914	4¾	250	710	3⅛
4	Kapaverum - -	93	1,32,769	56,562	52,707½	1,06,457	2¼	14,396½	59,556	4⅛	- -	- -	–
5	Kota Ramachendrapuram - - -	55	1,15,557	58,316	26,003	1,15,767	4¼	2,001	7,516	3¾	- -	- -	–
6	Kotapilly - - -	57	44,468	18,709	35,843	17,990	2⅛	9,908	37,628	3½	- -	- -	–
7	Rajahmundry - -	18	35,569	29,348	7,376	34,024	4½	- -	- -	–	13	397	17
8	Bickavole - - -	48	88,132	40,666	12,685	35,297	3⅛	20,717	80,719	4⅛	- -	- -	–
9	Peddapore - - -	14	29,039	21,017	3,927	9,521	6	3,017	34,849	11½	177	905	6¼
10	Lingumpurroo - -	108	23,393	12,203	9,481	8,203	1¼	7,519	18,659	2¼	- -	- -	–
11	Wooppada, &c - -	3	3,890	3,272	491	802	1½	346	3,410	2⅞	- -	- -	–
12	Andrunghy, &c - -	3	3,462	6,685	554	1,743	6⅛	326	953	3	- -	- -	–
	TOTAL - -	567	7,98,909	4,15,023	1,96,099¼	5,13,249	2¾	84,494¼	3,35,273	4	1,237¼	5,659	4½
	Sub-Division												
1	Mogultoor - - -	69	1,76,127	86,549	28,068	1,07,530	4¼	12,841	33,095	3	207	1,740	7½
2	Woondy - - -	91	1,64,095	44,955	14,661	41,853	2¾	32,596	1,04,436	3¼	24	3	-⅛
3	Tankoo - - -	65	1,59,323	61,745	39,260	1,53,260	4	1,506	7,281	4	- -	- -	–
4	Tademullah - -	49	33,601	21,220	19,365	22,599	1⅛	4,636	11,318	2½	- -	- -	–
		274	5,33,146	2,14,469	1,01,354	3,25,242	3¼	51,579	1,56,130	3	231	1,743	7½
	TOTAL of Government	841	13,32,055	6,29,492	2,97,453¼	8,34,491	2¾	1,36,073¼	1,91,403	3½	1,468¼	7,402	5
	Management												
1	Cocanada - - -	53	94,984	53,506	10,818	- -	1½	27,510	- -	4	34	- -	1¼
2	Pittapoor - - -	52	1,17,727	72,241	17,398	- -	3¼	27,108	- -	5¾	- -	- -	–
3	Chelloor - - -	8	21,914	28,804	6,477	- -	3¼	799	- -	2	- -	- -	–
4	Chullapilly - -	5	14,824	22,734	2,915	- -	4⅛	933	- -	4¾	82	- -	2¼
5	Kadiem - - -	13	22,968	24,687	8,519	- -	3¼	1,749	- -	3½	- -	- -	–
		131	2,72,417	2,01,974	46,127	- -	2½	58,099	- -	4¾	116	- -	2
6	Polaverum - - -	16	11,977	10,214	4,830	11,012	2¼	1,226	7,889	6½	- -	- -	–
	TOTAL - -	147	2,84,394	2,12,188	50,957	- -	–	59,325	- -	–	116	- -	–
	Other Zemindary and Proprietary Estates	261	3,06,793	1,70,356	- -	- -	–	- -	- -	–	- -	- -	–
	TOTAL - -	408	5,91,187	3,82,544	- -	- -	–	- -	- -	–	- -	- -	–
	GRAND TOTAL - -	1,249	19,23,242	10,12,036	- -	- -	–	- -	- -	–	- -	- -	–

Total Extent of Amarkum Land in Fusly 1262													
Lands			Total.			Deduct from amount in Column 18							
Land	Kist.	Average rate per Acre	Land	Kist	Average rate per Acre	Village Allowance and usual Remissions	Remissions	Total	Remaining Beriz	Ready Money Collections	Total Jamabundy Dowle for Fusly 1262	Collection	Collection for Fusly 1263
14.	15	16	17	18	19	20.	21	22	23	24	25	26	27
Acres	*Rs*	*Rs*	*Acres*	*Rs*	*Rs*	*Rs*	*Rs*	*Rs*	*Rs*	*Rs*	*Rs*	*Rs*	*Rs*
3,857¼	16,546	–	38,504	1,40,060	4⅛	5,008	951	5,959	1,34,101	14,353	1,48,454	1,44,266	1,41,918
723	3,715	2¾	26,368	1,03,442	4½	2,875	829	3,704	99,738	6,658	1,06 396	1,01,616	99,408
3,205	29,182	5	16,656	85,716	5½	3,108	2,770	5,887	79,829	8,[illegible]62	88 521	85,949	87,212
- -	- -	10⅞	67,104	1,66,013	2⅝	4,947	- -	4,947	1,61,066	9,060	1,70,126	1,70,125	1,63,[illegible]24
1,688	14,568	–	29,602	1,37,851	5	4,471	206	4,677	1,39,174	17,591	1,50,765	1,42,055	1,43 417
33	409	10	45,784	56,027	2¼	1,160	51	1,211	54,816	3,024	57,840	57 7[illegible]5	52,385
939	7,403	8	8,328	41,824	5	1,312	365	1,677	40,147	2,570	42,717	31,087	40 790
608	3,888	8¼	34,010	1,19,904	3½	2,858	145	3,003	1,16,901	4,142	1,21,043	1,16,750	1,21,119
- -	- -	6½	7,121	45,275	9⅗	1,349	- -	1,349	43,926	77	44,003	44 003	43 880
- -	- -	–	17,000	26,862	1⅞	728	- -	728	26,134	620	26,754	26,754	[illegible]
- -	- -	–	1,497	4,212	2⅓	71	- -	71	4,141	5	4,146	4,178	4,061
- -	- -	–	880	2,606	6	78	- -	78	2,618	92	2,710	2,641	2,485
11,053½	75,701	6⅞	2,92,884	9,29,882	3¼	27,065	5,326	33,291	8,96,591	66,884	9,63,475	9,26,091	9,19 679
1,556	14,341	10¼	42,672	1,56,707	5½	5,659	2,185	7,844	1,48,862	10,668	1,59 530	1,58 128	1,55,[illegible]26
- -	- -	–	47,281	1,46,292	3	3,628	3,818	7,446	1,38,846	4,890	1,43,730	1,40,661	1 42,446
961	9,982	10½	41,727	1,70,523	4½	5,089	2,547	7 636	1,62,887	11,458	1,74,345	1,70,239	1,74,382
- -	- -	–	24,001	33,917	2	1,566	60	1,626	32,291	2,519	34 810	34,6[illegible]6	32 661
2,517	21,323	9½	1,55,681	5,07,438	3¼	15,942	8,610	24,552	4,82,886	29,535	5,12 421	5,03,644	[illegible]
13,570¼	1,00,024	7¾	4,48,565	14,37,320	3¼	43,007	13,936	57,843	13,79,477	96,419	14,7[illegible],896	14 29,725	14,24,694
- -	- -	–	38,362	- -	3¼	- -	- -	- -	- -	- -	1,23,070	1,16,233	1,04 868
- -	- -	–	44,306	- -	3¾	- -	- -	- -	- -	- -	1,65,533	1,41,105	1,38 811
- -	- -	–	7,276	- -	3⅛	- -	- -	- -	- -	- -	24,806	21,473	23,289
38	- -	15½	3,968	- -	4¼	- -	- -	- -	- -	- -	18,109	17,062	18,2[illegible]6
917	- -	5	11 185	- -	3½	- -	- -	- -	- -	- -	38,929	31,299	34 343
955	- -	5⅓	1,05,297	- -	3¾	- -	- -	- -	- -	- -	3,70,467	3 27,172	3 19,547
44	390	8¾	6,300	19,291	3	- -	- -	214	18,077	- -	19,026	17,981	16 442
909	- -	–	1,11,597	- -	–	- -	- -	- -	- -	- -	3,80,493	3,45,153	3,35,989
- -	- -	–	- -	- -	–	- -	- -	- -	- -	- -	3,06,733	3,06,793	2,79,000
- -	- -	–	- -	- -	–	- -	- -	- -	- -	- -	6 96,256	6,51,946	6 14,989
- -	- -	–	- -	- -	–	- -	- -	- -	- -	- -	21,72,182	20,81,681	20,39,683

26. Admitting that averages are most uncertain data to argue from, they are the only available criterion for comparison with other districts; and in contrasting the assessment of different classes of land in the same district, the average on the whole area is a fair exponent of their relative value and fertility. It will be observed how frequently the assessment upon the dry land is higher than that of the wet, and it will at once be understood how great will be the effect produced on the Delta talooks, when, protected from inundations, and the drainage completely under control, certain irrigation is supplied to the dry lands from which already the greatest returns are derived; and to the wet lands, which though sometimes producing, as in Woondy, a most luxuriant rice crop, are lowly assessed, because of the uncertainty to which they have hitherto been exposed.

Extract Minutes of Consultation, 10th July 1854, Revenue Board proceeding regarding a revenue survey, dated 26th May 1853.

27. Another observation will probably suggest itself on a perusal of the tables and papers now submitted, viz., the immediate necessity which seems to exist for a full and accurate survey of that part of the district which is directly under the influence of the annicut. The accompanying small outline map of the district will be of assistance in forming an opinion on this subject, and will be found useful for reference. Although, as observed by Government in a communication lately received, an accurate knowledge of the area may not be absolutely necessary in order to readjust the assessment, or to lower it where manifestly too high, I would respectfully urge that a scientific revenue and topographical survey of the Delta of the Godavery, which would have been of incalculable value if accomplished before the commencement of the excavation of the channels, will even now most materially assist the operations of the engineers, and simplify the proceedings of the revenue officers.

28. The Board will not have failed to remark in the several survey plans submitted to them, that the village boundaries in this district are invariably well defined, by broad cattle roads or poontas, distinctly separating the lands of adjacent villages. In the altered circumstances of the Delta, this large proportion of waste land will be no longer necessary; much of it will come under the plough, to compensate for the loss of cultivated land occupied by channels and banks; the boundary at the same time being preserved in its integrity. This could not be satisfactorily effected, it seems to me, without a survey. I am not disposed to think that the numerous channels already existing, and in course of excavation, will increase the difficulty of the survey operations; the two might proceed hand in hand together, and with a competent staff for the purpose, the latter might be speedily completed, and at a comparatively moderate cost. I will not, however, pursue this subject further, feeling certain that it will receive all the attention it merits. I forward a survey plan of a partially watered village, to exemplify what is said above. Taking only 10 acres as the average extent of the boundary poontas of each village, the land of this description which might eventually be brought into cultivation in the Delta, would not be less than from 4,000 to 5,000 acres in Tossipoody; it will be seen it amounts to more than 20.

29. The last column of the statement which follows para. 25, calls for particular remark. The tables and observations recorded in this paper do not refer to fusly 1263; they are brought up to fusly 1262 only; but in the year which has lately closed, the value of the annicut works has been most eminently conspicuous. In the letter above referred to, I wrote as follows:—

"Some of the villages in the Delta talooks of my division have now been watered for the last two or three years; others have been partially relieved by drainage, and in the present disastrous year there are very few which have not in some way or other benefited by the Godavery works The produce has been abundant both on dry and wet lands; the dry lands hitherto dependent on the falling rain and periodical inundations of the Godavery, have produced abundantly wherever the channel water has reached them; and the wet lands, particularly in some villages of the Woondy talook, have yielded a crop which I believe has rarely been equalled, and never exceeded; while in other parts of the division, where the early crops were damaged and the seed beds destroyed by the unusual inundation of the Kristna, the ryots have retrieved their losses by realising a fine dalva crop, in consequence of the unfailing supply of Godavery water. In the present year, therefore, the channels have been of the greatest service both to wet and dry lands; the ryots have in general reaped the full benefit of the prevailing high prices; they have been saved from the distress to which others in this year of scarcity have been exposed, and their prospects are most cheering."

"But I regard this as the first dawn of hope; I look upon it as a matter for deep thankfulness and congratulation, not as a reason for increasing a tax which they have hitherto paid with difficulty. Anxious as I am to give all credit to the noble works which will yet be the means of regenerating this district, I am not the less desirous that the people should reap the whole benefit which these channels are calculated to confer upon them. I feel sure that we cannot err on the side of moderation."

30 These remarks are of general application to the whole district, and I would fain hope that the Government concur in their propriety, satisfied that the circumstances of the district are gradually and surely improving, we are willing to acknowledge that there are difficulties and drawbacks which time only can remove, and are content to forego for a season our claim to a direct and large enhancement of the revenue.

31. The Commissioner for the Northern Circars has drawn up a memorandum of the probable value of the produce saved in the passed year, showing by figured statements and arguments, the general result of the annicut project, both in fusly 1263, and in the previous years; and it seems almost a waste of words to add anything to what is therein advanced in support of the benefits this district has received from Godavery irrigation He estimated the value of produce saved, at about 28 lacs; the actual increase of the revenue he put down at 3,70,806; and the advance of 16,32,978 in the export trade he likewise attributed to the annicut. The estimate of produce saved in this district alone, prepared by myself from the returns furnished by the tahsildars, of the extent of land watered from the Godavery, whether by channels, by natural inundation, or by timely breaching of banks, &c, amounted to about 36 lacs. These are admitted to be nothing more than simple guesses, though framed upon legitimate data. But facts, which are palpable to all, witness to the effects of the works in this disastrous year, and scarcely call for comment. A revenue realised very little short of the amount collected in the previous year, and higher than the average of any former period, exports valued at 18 lacs of rupees; imports at 2,64,546, man and beast supplied, throughout a scorching season of drought, with abundance of river water, the ryots saved from the depression caused by a complete failure of the harvest, as was the case in other less favoured districts, we may indeed say that if the annicut had done nothing more, it has in this one year realised one of the brightest predictions of its projector.

32. In page 80 of Colonel Cotton's report, written in April 1845, the following sentences occur. "Take the case of one single year of famine, and consider the dreadful amount of suffering which it involves, to say nothing of the lasting injury to the revenue, which is the certain consequence of it, and the incalculable blessing that an annicut would be to the district may be well imagined. That such a thing as a famine in any of the districts near the Godavery should ever take place is indeed the deepest reproach to us. The consideration that such a time has been, and that it will inevitably occur again within a few years, if an annicut is not built, ought alone to be sufficient to induce us to build one, even if there were no returns in ordinary years." No servant of Government, who, like myself, has witnessed the effect of the annicut in the past year, but will rejoice that he has lived to see the day when this reproach has been taken from us.

33. But we will examine more particularly the operations of trade, as revealed by the returns of exports and imports during the past, in comparison with former years. A separate statement in the Appendix gives the export and import trade for the last ten years. The following is a statement of the value of exports by sea for the last 19 years:—

STATEMENT showing the VALUE of GOODS Exported by Sea from the District of *Rajohmundry*, from the Official Year 1835-36 to 1853-54.

ITEMS	1835-36	1836-37.	1837-38	1838-39.	1839-40.	1840-41.	1841-42.	1842-43	1843-44.	1844-45	1845 46.	1846-47	1847-48.	1848-49	1849-50.	1850-51	1851-52	1852-53	1853-54.	Quantity Exported in last Two Years.	
																				1852-53	1853-54.
	Rs.	*Rs.*	*Rs*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs*	*Rs.*	*Rs.*	*Rs.*	*Rs*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs*	*Corges*	*Corges.*
Piece goods - - -	4,91,502	4,37,451	4,08,819	2,26,768	1,94,515	2,11,353	1,67,212	1,59,312	1,08,119	1,01,100	1,35,456	3,89,000	1,75,185	1,22,059	1,53,703	1,65,884	1,31,459	1,11,461	1,58,265	3,624	4,676
Sugar - - - -	- -	- -	- -	- -	- -	- -	- -	- -	- -	7,280	16,414	26,281	721	46,295	74,273	2,17,695	1,35,289	2,98,734	2,85,652	*Cwt.* 23,683	*Cwt.* 22,698
Rice - - - -	40,604	6,094	46,599	27,706	27,278	1,374	17,237	87,112	1,19,440	1,90,518	3,55,950	3,78,422	2,53,825	2,14,655	1,02,041	2,50,410	3,33,747	4,20,711	3,33,809	*Ben. Md.* 3,25,541	*Ben. Md.* 2,14,617
Gingely seeds - - -	- -	- -	1,018	12,156	4,539	2,459	7,593	1,509	9,500	796	8,215	27,095	1,54,959	97,944	1,48,676	2,52,390	1,21,047	1,48,811	2,02,036	79,019	1,31,202
Lamp oil ditto - -	1,318	- -	1,656	2,319	1,390	- -	3,067	4,725	5,942	2,205	14,725	10,950	16,795	25,923	10,741	4,711	4,038	38,511	6,365	43,752	4,923
Bengal gram - - -	10,777	14,809	30,650	33,250	3,393	1,181	7,596	53,476	58,001	1,47,131	99,106	69,664	1,47,677	2,34,964	2,25,246	1,66,587	2,23,802	1,07,056	3,02,627	88,224	1,88,818
Other articles - - -	1,59,133	2,28,014	1,57,372	1,19,942	1,33,730	90,279	2,56,657	2,58,241	3,32,989	2,81,468	2,77,848	4,54,978	3,48,126	3,10,216	2,54,037	3,41,390	3,57,232	5,07,695	4,54,779	—	—
TOTAL - - - *Rs*	7,03,334	6,86,368	6,46,114	4,22,141	3,64,839	3,06,646	4,59,362	5,64,375	6,33,991	7,30,498	9,07,774	13,56,336	10,97,238	10,52,056	9,68,717	13,99,067	13,06,614	16,32,979	18,43,593	—	—
Prices per Madras Garce in corresponding Fusly Year.																					
Rice - - - -	139	81	199	309	243	228	140	127	119	129	189	190	175	158	148	139	130	125	209	—	—
Gingely seeds - - -	202	238	247	214	151	282	134	155	138	173	182	167	167	147	151	189	191	200	257	—	—
Bengal gram - - -	129	93	110	177	254	179	123	114	101	90	146	103	119	73	80	122	128	132	200	—	—

34. The gradual decline in piece goods is fully compensated for by the increased exports of sugar, rice, and gingely seeds The prices of the different articles of produce taken in connexion with the amount exported, is an indication of the character of the season. Although the value of rice exported in the past year is only one lac of rupees below the preceding year, the price being nearly double the quantity exported, was little more than two-thirds of that which left the district in 1852-53 Besides maintaining its own population, the delta had to supply food for the upper talooks of the district, where scarcely a wet crop reached maturity. But the increase in the more valuable products of gingely oil-seed and Bengal gram is very striking, and testifies to the value of the crop which was saved from perishing in Fusly 1263.

A large portion of this amount too was exported in May and June, before the drought was apprehended, and before prices rose.

35. The stimulus imparted to the industry and productive resources of the province, by large establishments like the Rajahmundry sugar factory, must not be overlooked. I understand that Messrs Arbuthnot & Co's average expenditure is not less than three lacs of rupees per annum, and the value of sugar exported by them annually is very little below two lacs It is impossible to overrate the importance or value of the water communication commanded by the annicut to establishments of this character, and their success is in no slight degree attributable to the facility of communication, and the cheap transport of goods thus put within their reach; and I have no doubt that the managers of this, and of similar establishments, would be the first to admit that but for the main canals they must either have abandoned their undertakings or continued them at a disheartening loss. We may safely leave then to the mercantile community the calculation of the value in money of the benefits derived from the navigable canals dependent on the annicut.

Separate statement (F) shows the extent and progressive increase of cane cultivation.

The statement of traffic (G.) on the main navigation lines during the last and the present year, will illustrate this part of the subject.

36. It has been tritely said, figures can be made to prove anything Statements of the demand and collection of the revenue from land, and from extra items, may be framed, all too from authentic sources, but so put together, here taken and there left, as to suit the views of every writer who uses them. It has therefore occurred to me to compile a comprehensive table of the revenues of this district for the last 34 years,* containing, as it were, an abstract history of the province, which will be always useful for reference, and from which information can be derived in support of every argument it is desired to advance.

* Statement marked (K) in Appendix.

37. The progressive increase of the Government estates, and the decline of the zemindaries, the steady enhancement and security of the current revenue in the last decade, compared with any previous corresponding term of years; the diminution of the annual collection of arrears, which in former fuslies reached two, three, and even four lacs of rupees; the steady collection of the extra sources of revenue, notwithstanding the abolition of the Sayer in 1843, and the subsequent reduction of the Sea Custom duties; the rise in the price of salt; all these points, and many more, will be noted, and may be attributed, as reason or fancy suggest, to efficiency or laxity of management, to propitious or adverse seasons, to fluctuations of price, to a liberal or limited expenditure in the district of public and private money, and lastly, to improvement in the public works, and a general and efficient system of irrigation. One thing, however, these figures cannot be made to reveal, namely, the improvement in the actual condition of the people. Much of the truth may doubtless be detected by an observant eye, but personal inquiry among those who have passed from one state to the other is necessary to a full understanding of the matter.

With this statement I close the present remarks.

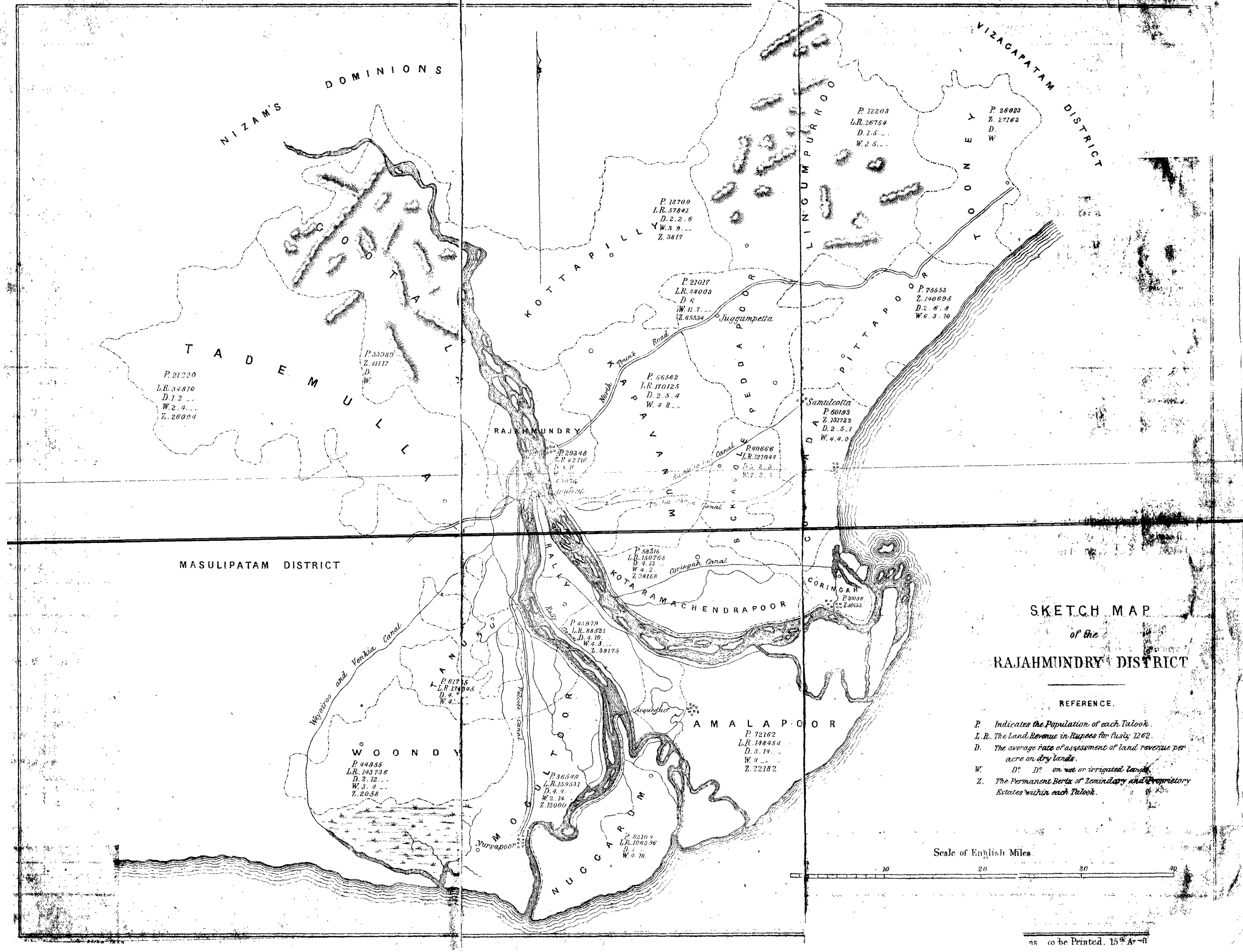
(signed) *G. N. Taylor*,
Sub-Collector in Charge.

(C.)—STATEMENT showing the QUANTITY and VALUE of GOODS exported by Sea, from the District of *Rajahmundry*, from the Official Year 1835-36 to 1853-54.

ARTICLES.	1835-36.		1836-37.		1837-38		1838-39.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Corges. p.	*Rs.*	*Corges. p.*	*Rs.*	*Corges. p.*	*Rs*	*Corges. p.*	*Rs.*
Piece goods - -	5,547 14	4,91,502	5,361 13	4,37,451	5,793 0	4,08,81[illegible]	3,314 10	2,26,768
Sugar - - -	—	—	—	—	—	—	—	—
	M. g. m. s.		*M. g. m. s.*		*M. g. m. s*		*M. g. m s*	
Rice - - -	321 311	40,604	47 396	6,094	366 369	46,599	217 345	27,706
Gingily seeds - -	- - -	- -	- - -	- -	5 382	1,013	69 75	12,156
Lamp oil seeds -	9 366	1,318	- - -	- -	12 62	1,656	17 137	2,319
Bengal gram - -	163 121	10,777	224 226	14,809	464 261	30,650	494 207	33,250
Other articles - -	- - -	1,59,133	- - -	2,28,014	- - -	- -	- - -	1,19,942
TOTAL - - -	- - -	7,03,334	- - -	6,86,368	- - -	6,46,114	- - -	4,22,141

ARTICLES.	1839-40.		1840-41.		1841-42.		1842-43.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Corges. p.	*Rs.*	*Corges. p.*	*Rs.*	*Corges. p.*	*Rs.*	*Corges. p.*	*Rs.*
Piece goods - -	2,864 1	1,94,515	3,518 5	2,11,353	2,540 2	1,67,212	2,755 6	1,59,312
Sugar - - -	—	—	—	—	—	—	—	—
	M. g. m. s		*M. g. m. s.*		*M. g. m. s.*		*M. g. m s.*	
Rice - - -	156 131	27,278	7 76	1,374	87 107	17,237	435 154	87,112
Gingily seeds - -	26 345	4,533	10 156	2,459	49 21	7,593	8 312	1,509
Lamp oil seeds -	10 180	1,390	- - -	- -	25 225	3,067	37 319	4,725
Bengal gram - -	36 149	3,393	9 178	1,181	60 11	7,596	325 333	53,476
Other articles - -	- - -	1,33,730	- - -	90,279	- - -	2,56,657	- - -	2,58,241
TOTAL - - -	- - -	3,64,839	- - -	3,06,646	- - -	4,59,362	- - -	5,64,375

ARTICLES.	1843-44.		1844-45.		1845-46.		1846-47.	
	Quantity.	Value.	Quantity	Value.	Quantity.	Value.	Quantity.	Value.
	Corges. p.	*Rs.*	*Corges. p.*	*Rs.*	*Corges. p.*	*Rs.*	*Corges. p.*	*Rs.*
Piece goods - -	2,045 0	1,08,119	1,898 9	1,01,100	2,494 10	1,35,456	7,520 15	3,89,006
			Candies. m. s		*Candies. m. s*		*Cwt. lbs.*	
Sugar - - -	- - -	- -	485 7	7,280	900 15	16,414	6,631 64	26,281
	M. g. m. s.		*B. mds lbs.*		*B. mds lbs.*			
Rice - - -	600 129	1,19,440	1,15,093 29	1,90,518	2,03,167 52	3,55,950	1,38,529 9	3,78,422
			M. g. mds		*M. g. mds.*		*Parrahs. mds*	
Gingily seeds - -	59 154	9,500	3 61	796	45 251	8,215	23,337 0	27,035
Lamp oil seeds -	47 215	5,942	17 347	2,205	115 313	14,725	6,381 0	10,950
			B. mds. lbs.		*B. mds. lbs*			
Bengal gram - -	414 111	58,001	1,21,338 33	1,47,131	74,626 81	99,166	33,604 24	69,664
Other articles - -	- - -	3,32,989	- - -	2,81,468	- - -	2,77,848	- - -	4,54,978
TOTAL - - -	- - -	6,33,991	- - -	7,30,498	- - -	9,07,774	- - -	13,56,333


NIZAM'S DOMINIONS
VIZAGAPATAM DISTRICT
MASULIPATAM DISTRICT
COOTALL
TADEMULLA
P. 27220
L.R. 34810
D. 1. 2
W. 2. 4.
Z. 26094
P. 33380
Z. 41117
D.
W.
KOTTAPILLY
P. 18709
L.R. 57841
D. 2. 2. 6
W. 3. 9.
Z. 3817
LINGUMPURROO
P. 12203
L.R. 26754
D. 1. 5.
W. 2. 5.
TONEY
P. 26023
Z. 27163
D.
W.
P. 21017
L.R. 44008
D. 6
W. 11. 7.
Z. 65334
Juggumpetta
North Trunk Road
PEDDAPOOR
PITTAPOOR
P. 75553
Z. 140695
D. 2. 6. 8
W. 6. 3. 10
RAJAHMUNDRY
P. 29348
RAJAMUNDRY
KAPAVANUM
P. 56562
L.R. 170125
D. 2. 5. 4
W. 4 11.
Samulcotta
P. 60193
Z. 131722
D. 2. 5. 1
W. 4. 4. 0
Samulcotta Canal
CADA
P. 40666
L.R. 127044
BICKAVOLE
Canal
P. 58316
L.R. 150766
D. 4. 13
W. 4. 2.
Z. 24168
Coringah Canal
KOTA RAMACHENDRAPOOR
CORINGAH
P. 30198
Z. 10133
RALLY
P. 43979
L.R. 88521
D. 4. 10.
W. 4. 3.
Z. 39175
Weyairoo and Venkia Canal
TANUKU
P. 61775
L.R. 174345
D. 4.
W. 4.
WOONDY
P. 44955
L.R. 143736
D. 2. 12.
W. 3. 4
Z. 2058
Palcote Canal
MOGULTOOR
P. 36549
L.R. 159531
D. 4. 4.
W. 2. 14.
Z. 12000
Nursapoor
Acqueduct
AMALAPOOR
P. 72162
L.R. 148454
D. 3. 14.
W. 4
Z. 22182
NUGGARUM
P. 52104
L.R. 106396
D.
W. 4. 10.
Scale of English Miles
10
20
30
40

SKETCH MAP
of the
RAJAHMUNDRY DISTRICT

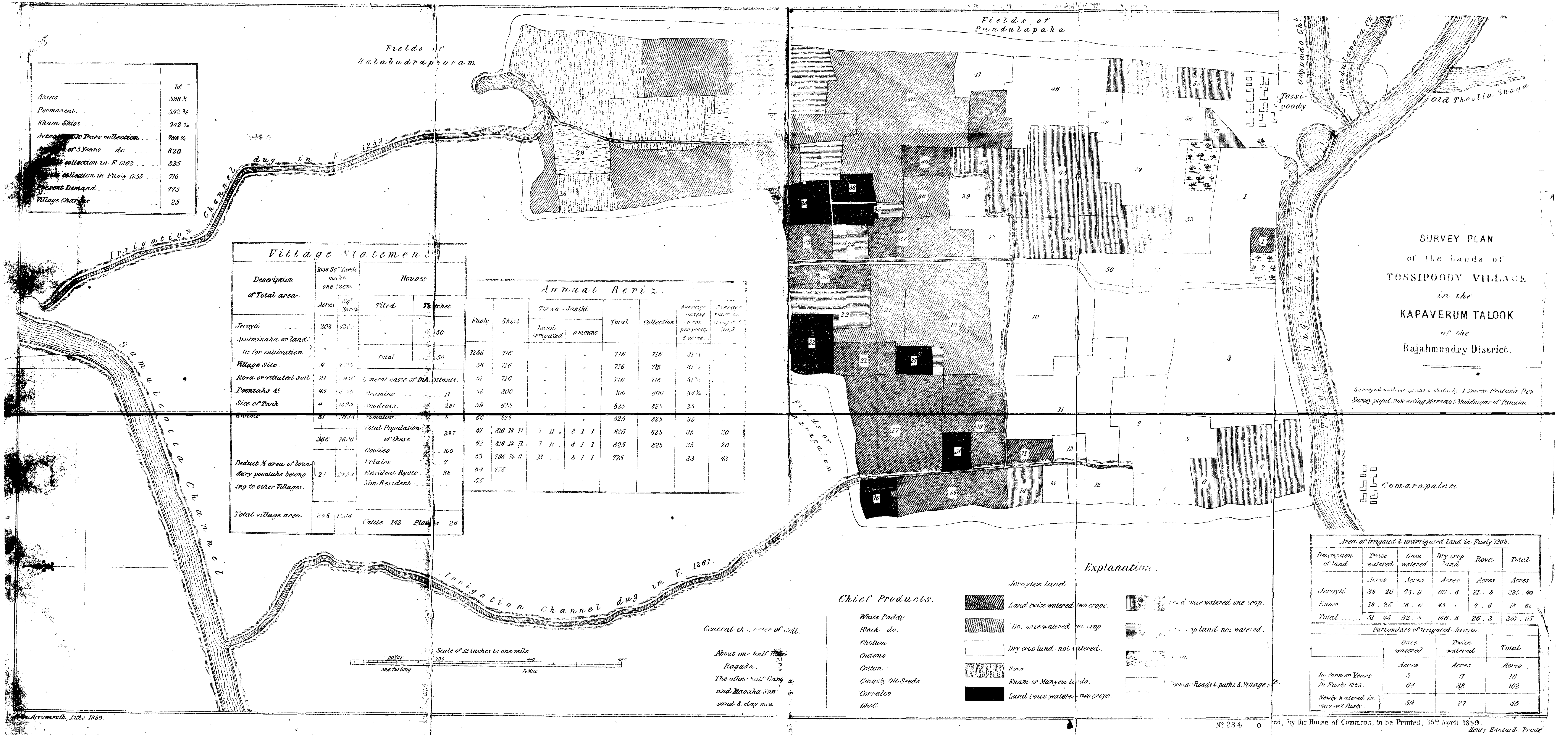
REFERENCE.

P. Indicates the Population of each Talook.
L.R. The Land Revenue in Rupees for fusly 1262.
D. The average rate of assessment of land revenue per acre on dry lands.
W. D^o D^o on wet or irrigated lands.
Z. The Permanent Berix of Zemindary and Proprietory Estates within each Talook.

as to be Printed, 15th April

SURVEY PLAN
of the Lands of
TOSSIPOODY VILLAGE
in the
KAPAVERUM TALOOK
of the
Rajahmundry District.

Surveyed with compass & chain by J. Seeta Prakasa Row Survey pupil, now acting Maramut Muddugar of Tunuku.


Fields of Balabudrapooram
Fields of Pundulapaka
Irrigation Channel dug in F. 1259
Samulcota Channel
Irrigation Channel dug in F. 1261
Fields of Comarapalem
Tossipoody
Comarapalem
Ooppada Ch.
Pundulapaca Ch.
Old Thoolia Bhaga
Thoolia Bhaga Channel
1
2
3
5
6
7
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
34
36
37
38
39
40
41
42
43
44
45
46
49
50
53
55
56

	Rs.
Assets	598 ½
Permanent	392 ⅝
Kham Shist	942 ¾
Average of 10 Years collection	765 ½
Average of 5 Years do	820
collection in F. 1262	825
collection in Fusly 1255	716
Present Demand	775
Village Charges	25

Village Statement

Description of Total area.	1936 Sq. Yards make one Room. Acres	Sq. Yards
Jeroyti	203	4305
Asulminaha or land fit for cultivation	"	"
Village Site	9	4735
Rova or vitiated soil	21	3426
Poontahs &c.	45	3636
Site of Tank	4	1435
Enams	81	2678
	366	4808
Deduct ½ area of boundary poontahs belonging to other Villages.	21	2824
Total village area.	345	1984

Houses	Tiled	Thatchet
	"	50
Total		50

General caste of Inhabitants.	
Bramins	11
Soodross	281
Somaties	5
Total Population	297
of these	
Coolies	100
Polairs	7
Resident Ryots	38
Non Resident	,

Cattle 142 Ploughs 26

Annual Beriz.

Fusly	Shist	Turwa - Jasthi Land irrigated	Turwa - Jasthi amount	Total	Collection	Average assessment per poolty 8 acres	Average shist on irrigated land
1255	716		"	716	716	31 ⅓	
56	716	"	"	716	716	31 ½	"
57	716	"		716	716	31 ¾	"
58	800	"	"	800	800	34 ¾	"
59	825	"	"	825	825	35	"
60	825		"	825	825	35	"
61	816 14 11	7 11 "	8 1 1	825	825	35	20
62	816 14 11	7 11 "	8 1 1	825	825	35	20
63	766 14 11	13 " "	8 1 1	775		33	43
64	775						
65							

Scale of 12 inches to one mile.

80 Yds. 320 440 600

one furlong ½ Mile

General character of Soil.

About one half Black Ragada.
The other half Carra and Masaka Sandy sand & clay mix.

Chief Products.

- White Paddy
- Black do.
- Cholum
- Onions
- Cotton
- Gingely Oil Seeds
- Corraloo
- Dholl

Explanation.

Jeroytee land.

▩	Land twice watered two crops.
▨	Do. once watered one crop.
☐	Dry crop land - not watered.
▥	Rova

Enam or Manyem lands.

■	Land twice watered two crops.
▥	Land once watered one crop.
▤	Dry crop land - not watered.
▧	Rova
☐	Poontas Roads & paths & Village site.

Area of irrigated & unirrigated land in Fusly 1263.

Description of land	Twice watered	Once watered	Dry crop land	Rova	Total
	Acres	Acres	Acres	Acres	Acres
Jeroyti	38 . 20	63 . 9	101 . 8	21 . 5	225 . 40
Enam	13 . 25	18 . 6	45 "	4 . 8	18 61
Total	51 45	82 . 5	146 . 8	26 . 3	307 . 05

Particulars of irrigated Jeroyti.

	Once watered	Twice watered	Total
	Acres	Acres	Acres
In former Years	5	11	16
In Fusly 1263.	64	38	102
Newly watered in current fusly	59	27	86

J. Arrowsmith, Litho. 1859.

No. 234. Ordered, by the House of Commons, to be Printed, 15th April 1859.

Henry Hansard, Printe

STATEMENT showing the Quantity and Value of Goods exported by Sea, from the District of *Rajahmundry*—continued

ARTICLES.	1847-48.			1848-49.			1849-50.			1850-51		
	Quantity.		Value.	Quantity.		Value.	Quantity.		Value.	Quantity.		Value
	Corges.	*p*	*Rs*	*Corges.*	*p.*	*Rs.*	*Corges.*	*p.*	*Rs.*	*Corges.*	*p.*	*Rs.*
Piece goods - -	3,615	14	1,75,135	2,490	11	1,22,059	3,135	2	1,53,703	3,575	1	1,65,884
	Cwt.	*lbs.*		*Cwt.*	*lbs.*		*Cwt.*	*lbs.*		*Cwt.*	*lbs.*	
Sugar - - -	120	68	721	2,945	75	46,295	10,664	13	74,273	19,117	40	2,17,695
				B. mds.	*lbs.*		*B. mds.*	*lbs.*		*B. mds.*	*lbs.*	
Rice - - -	97,542	74	2,53,825	1,33,775	71	2,14,655	67,304	23	1,02,041	1,79,066	68	2,50,419
	Parrahs.	*mds*										
Gingily seeds - -	62,111	3	1,54,959	41,090	23	97,944	93,270	15	1,48,676	1,56,423	30	2,52,390
Lamp oil seeds -	2,423	1	16,795	21,285	37	25,923	8,952	36	10,741	4,027	46	4,711
	Cwt.	*lbs.*										
Bengal gram - -	70,168	6	1,47,677	1,59,193	57	2,34,964	1,51,279	23	2,25,246	1,13,304	60	1,66,587
Other articles - -	-	-	3,48,126	-	-	3,10,216	-	-	2,54,037	-	-	5,41,390
TOTAL - - -	-	-	10,97,238	-	-	10,52,056	-	-	9,68,717	-	-	15,99,037

ARTICLES.	1851-52.			1852-53.			1853-54.		
	Quantity.		Value.	Quantity.		Value.	Quantity.		Value
	Corges.	*p*	*Rs.*	*Corges.*	*p.*	*Rs.*	*Corges.*	*p.*	*Rs*
Piece goods - - -	3,307	10	1,31,459	3,624	10	1,11,461	4,676	14	1,58,265
	Cwt.	*lbs.*		*Cwt.*	*lbs.*		*Cwt.*	*lbs*	
Sugar - - - -	13,853	55	1,35,289	23,683	4	2,98,734	22,698	100	2,55,652
	B. mds.	*lbs.*		*B. mds.*	*lbs.*		*B mds*	*lbs*	
Rice - - - -	2,29,183	61	3,33,747	3,25,541	0	4,20,711	2,14,617	25	3,13,809
Gingily seeds - -	64,511	53	1,21,047	79,019	24	1,48,811	1,31,202	69	2,92,030
Lamp oil seeds - -	4,594	76	4,038	43,752	14	38,511	4,923	51	6,365
Bengal gram - -	1,50,092	10	2,23,802	88,224	53	1,27,056	1,88,818	27	3,02,627
Other articles - -	-	-	3,57,232	-	-	5,07,695	-	-	4,54,77[illegible]
TOTAL - - -	-	-	13,06,614	-	-	16,32,979	-	-	18,33,533

Rajahmundry District, Dowlaiswarm,
22 September 1854.

N. G. Taylor,
Sub-Collector in Charge.

(D.)—STATEMENT showing the Value of IMPORTS and EXPORTS by Sea in the *Rajahmundry* District during the last 10 Years.

OFFICIAL YEARS.	CORINGA.			COCANADA.			NURSAPOOR.			TOTAL.			PARTICULARS.				
	Value of British Goods.	Value of Foreign Goods.	TOTAL.	Value of British Goods.	Value of Foreign Goods.	TOTAL.	Value of British Goods.	Value of Foreign Goods.	TOTAL.	Value of British Goods.	Value of Foreign Goods.	TOTAL.	Paddy, Rice, Jonnalu, and Ragooloo.	Pulses.	Gingily and Lamp Oil Seeds.	Sugar.	Gruff Goods.
1.	2.	3	4.	5	6.	7	8.	9	10	11	12.	13.	14	15.	16.	17.	18
EXPORT:	*Rs.*																
1844-45 -	4,08,481	-	4,08,481	2,26,076	-	2,26,076	95,941	-	95,941	7,30,498	-	7,30,498	1,99,502	2,66,368	3,091	7,280	2,54,347
1845-46 -	4,27,475	2,728	4,30,203	3,85,178	-	3,85,178	92,393	-	92,393	9,05,046	2,728	9,07,774	3,78,969	2,01,739	22,940	16,414	2,87,712
1846-47 -	7,64,295	-	7,54,295	4,66,345	-	4,66,345	1,35,696	-	1,35,696	13,56,336	-	13,56,336	4,21,481	2,86,492	37,985	26,281	5,84,097
1847-48 -	6,99,679	-	6,99,679	3,05,819	360	3,06,179	91,380	-	91,380	10,96,878	360	10,97,238	2,59,705	2,22,885	1,71,754	721	4,42,173
1848-49 -	6,51,914	3,852	6,55,766	3,12,050	110	3,12,160	84,130	-	84,130	10,48,094	3,962	10,52,056	2,23,004	3,12,353	1,23,867	46,295	3,46,537
1849-50 -	6,27,939	4,129	6,32,068	2,59,630	54	2,59,684	76,965	-	76,965	9,64,534	4,183	9,68,717	1,07,503	2,74,414	1,59,417	74,273	3,53,110
1850-51 -	7,52,872	2,086	7,54,958	6,40,556	136	5,40,692	1,03,417	-	1,03 417	13,96,845	2,222	13,99,067	2,85,073	2,90,851	2,58,338	2,17,695	3,47,110
1851-52 -	6,30,972	405	6,31,377	5,64,497	100	5,64,597	1,10,640	-	1,10,640	13,06,109	505	13,06,614	4,36,266	3,04,538	1,28 870	1,35,289	3,01,651
1852-53 -	5,78,941	288	5,79,229	9,04,729	18	9,04,747	1,49,003	-	1,49,003	16,32,673	306	16,32,979	4,61,244	2,18,390	2,00,963	2,98,734	4 53,648
1853-54 -	6,98,891	-	6,98,891	9,53,300	3,511	9,56,811	1,77,831	-	1,77,831	18,30,022	3,511	18,33,533	3,75,248	4,53,749	2,99,999	2,85,652	4,18,885
IMPORT:																	
1844-45 -	2,91,079	605	2,91,684	11,868	316	12,184	27,774	-	27,774	3,30,721	921	3,31,642	1,87,661	841	696	- -	1,42 444
1845-46 -	3,55,943	439	3,56,382	9,865	2,097	11,962	20,405	-	20,405	3,86,213	2,536	3,88,749	2,48,384	4,764	- -	- -	1,35,601
1846-47 -	3,05,849	211	3,06,060	55,422	212	55,634	49,671	-	49,671	4,10,942	423	4,11,365	1,86,916	1,735	1,933	881	2,19,900
1847-48 -	5,62,263	665	5,62,928	32,836	688	33,524	40,133	-	40,183	6,35,232	1,353	6,36,585	3,37,656	2,261	- -	692	2,95,976
1848-49 -	3,89,491	60	3,89,551	14,513	1,586	16,099	88,252	-	88,252	4,42,256	1,646	4,43,902	2,34,362	- -	- -	- -	2,09,540
1849-50 -	2,80,583	4,549	2.85,132	27,939	2,378	30,317	15,678	-	15,687	3,24,200	6,927	3,31,127	1,74,085	- -	- -	- -	1,57,042
1850-51 -	2,24,773	-	2,21,773	21,463	4,457	25,920	51,101	-	51,101	2,97,337	4,457	3,01,794	1,20,445	56	-	139	1,81,156
1851-52 -	2,58,931	883	2,59,814	35,124	2,212	37,336	51,253	-	51,253	3,45,308	3,095	3,48,403	91,583	8,975	23,064	1,939	2,22,842
1852-53 -	1,53,395	-	1,53,395	34,611	1,628	36,239	48,332	-	48,332	2,36,338	1,628	2,37,966	83,473	3,290	5,726	1,483	1,93,994
1853-54 -	1,68,172	557	1,68,729	50,374	6,672	57,046	38,771	-	38,771	2,57,317	7,229	2,64,546	43,193	2,038	3,073	1,397	2,14,845

Rajahmundry District, Dowlaiswaram,
22 September 1856.

G. N. Taylor,
Sub-Collector in Charge.

(E.)—MEMORANDUM showing the Average Bazar Wholesale PRICES of Rice, Boot Gram, Gingely Oil Seeds, and Lamp Oil Seeds, in the District of *Rajahmundry*, from Fusly 1245 to 1263.

FUSLY YEARS	Rice, per Madras Garce.	Bengal Gram, per Madras Garce	Gingily Oil Seeds, per Madras Garce.	Lamp Oil Seeds, per Madras Garce.
1245 - - - - -	139 9 2	129 5 9	202 5 8	133 8 11
1246 - - - - -	181 1 –	92 5 9	238 8 8	137 13 1
1247 - - - - -	199 5 3	110 11 –	247 1 10	154 14 11
1248 - - - - -	309 11 9	177 14 3	214 8 10	73 2 3
1249 - - - - -	245 1 10	254 8 4	151 4 5	165 1 10
1250 - - - - -	228 6 1	179 7 9	282 1 10	147 1 –
1251 - - - - -	140 11 1	123 6 2	134 15 9	126 2 6
1252 - - - - -	127 15 3	114 11 1	135 8 9	114 12 9
1253 - - - - -	119 4 3	101 3 4	138 14 7	76 4 11
1254 - - - - -	129 1 9	90 8 4	173 – 5	83 14 2
1255 - - - - -	189 5 8	146 15 10	182 12 4	120 3 6
1256 - - - - -	190 9 5	163 14 –	167 14 8	146 9 8
1257 - - - - -	175 1 8	119 10 6	167 10 7	121 5 4
1258 - - - - -	158 11 3	73 6 5	147 15 –	106 14 3
1259 - - - - -	148 14 2	80 5 8	151 7 7	132 18 3
1260 - - - - -	139 14 4	122 12 9	189 8 1	157 14 11
1261 - - - - -	130 9 9	128 10 3	191 13 10	119 14 8
1262 - - - - -	125 8 2	131 11 4	200 14 10	111 15 8
1263 - - - - -	209 12 7	200 11 5	257 4 8	173 11 5

Rajahmundry District, Dowlaiswarum, 22 September 1854.

G. N. Taylor,
Sub-Collector in Charge.

(F.)—STATEMENT showing the Extent of LAND cultivated with Sugar Cane, from Fusly 1249 to 1263, in the *Rajahmundry* District.

No.	TALOOKS	Fusly 1249	Fusly 1250	Fusly 1251.	Fusly 1252	Fusly 1253	Fusly 1254	Fusly 1255	Fusly 1256	Fusly 1257.	Fusly 1258.	Fusly 1259.	Fusly 1260	Fusly 1261	Fusly 1262	Fusly 1263
		Ps.†	*Ps*	*Ps.*	*Ps.*	*Ps.*	*Ps*	*Ps.*	*Ps*	*Ps*	*Ps*	*Ps*	*Ps.*	*Ps.*	*Ps.*	*Ps.*
1	Amalapore* -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2	Nagarum - -	3	3¾	2¾	3¼	2	2¾	14¾	15¼	15	18	21½	24¾	20½	21¾	27¾
3	Rally - -	–	–	–	–	–	–	–	⅛	¼	½	½	1¼	2⅛	4	6⅛
4	Kota Ramachendrapooram	–	–	–	–	–	–	–	–	–	–	–	–	–	–	¾
5	Bickavole -	–	–	–	–	–	–	–	–	–	–	–	–	–	$\frac{1}{10}$	$\frac{1}{16}$
6	Mogultoor -	–	4	2½	1½	$\frac{1}{16}$	¼	4¾	9	8¾	11⅛	12¼	11⅛	10	16¼	$21\frac{1}{16}$
7	Woondy - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8	Tanuku - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	¼
9	Peddapore -	–	–	–	4½	–	13½	34¾	36½	139	132½	113¾	136½	128⅛	152½	205¾
10	Rajahmundry -	–	–	–	–	–	–	–	¼	1¾	½	–	–	–	–	–
11	Kotapilly -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	¼
12	Lingumpurroo -	8½	8¼	9	7¾	8	12	18	12½	17	19¼	20¼	21½	23¼	31¾	27¼
13	Pittapoor* -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	TOTAL - -	11½	16	14¼	17	$10\frac{1}{16}$	28½	72¼	73½	181¾	181⅞	168¼	195⅛	184	226¼	289¼

* Proper Accounts not received from Amalapore and Pittapore.

† Pooties of Light Acres.

Rajahmundry District, Dowlaiswarum, 22 September 1854.

G. N. Taylor,
Sub-Collector in Charge.

(G.)—MEMORANDUM showing the Number of DHONIES, &c. passed and re-passed through the *Dhonlaiswarum* Lock, commencing from 1st January to 31st December 1853.

Nos.	Names of Articles.	Number of Dhonies.	Quantity of Goods.			Value of Goods	Tonnage.	—
			Measuring Candies	Weighing Candies.	Number			
1	Rice	90	448	-	-	9,856	319	at 64 maunds per candy.
2	Paddy	89	585	-	-	5,850	325	at 50 - - ditto
3	Lamp-oil seeds	118	1,058	-	-	33,856	558	at 50 - - ditto.
4	Gingely oil seeds	154	1,736	-	-	69,440	964	at 50 - - ditto.
5	Horse gram	53	522	-	-	8,352	371	at 64 - - ditto.
6	Bengal gram	322	2,955	-	-	1,03,425	1,871 ½	at 57 - - ditto.
7	Bones	29	-	361	-	451	80	at 4½ candies per ton.
8	Tobacco	56	-	839	-	21,814	186	at 4½ - - ditto.
9	Green gram	22	175	-	-	2,800	135 ½	at 64 maunds per ton.
10	Red gram	19	189	-	-	2,646	135	at - - ditto.
11	Raggy	-	8	-	-	96	5	at 50 - - ditto.
12	Sand	1	6	-	-	6	5	at 70 - - ditto.
13	Wheat	1	10	-	-	320	6	at 57 - - ditto.
14	Tuntapoo seeds	5	37	-	-	222	26	at 64 - - ditto.
15	Black gram	7	64	-	-	896	46	at - - ditto.
16	Salt	173	1,561	-	-	34,342	1,110	at - - ditto.
17	Anoomooloo	12	94	-	-	1,128	63	at 60 - - ditto.
18	Hemp seeds	6	22	-	-	352	16	at 64 - - ditto.
19	Soap nuts	1	16	-	-	320	6	at 32 - - ditto.
20	Corraloo	1	39	-	-	468	25	at 75 - - ditto.
21	Cholum	5	11	-	-	176	8	at 64 - - ditto.
22	Shell chunam	58	610	-	-	3,812	339	at 50 - - ditto.
23	Chillies	24	-	60	-	1,800	13 ½	at 4½ candies per ton.
24	Saltpetre	10	-	146	-	5,840	32	at - - ditto.
25	Empty boxes	2	-	-	6	12	—	
26	Vine boxes	1	-	-	7	504	1	
27	Charcoal bales	-	-	-	30	150	6 ½	
28	Jaggery	140	-	5,398	-	37,786	1,199	at 4½ candies per ton.
29	Sugar	141	-	4,478	-	2,23,900	995	at - - ditto.
30	Gunners	11	-	-	16,650	5,550	66	at 3 gunnies per maund.
31	Vossums	7	-	-	5,281	4,222	59	at 1 vossum per maund.
32	Empty bags	3	-	-	6,625	993	7	at 10 bags per maund
33	Hemp	3	-	37 ½	-	450	8 ½	at 4½ candies per ton.
34	Cotton	34	-	354	-	22,656	78 ½	at - - ditto.
35	Chayaroot	2	-	10	-	150	2	at - - ditto.
36	Empty casks	2	-	-	10	40	1	
37	Tiles	2	-	-	21,000	13	2	at 2 lbs. each.
38	Firewood	878	-	18,348	-	6,880	4,080	at 4½ candies per ton.
39	Rough stone	355	-	18,122	-	1,982	4,028	at - - ditto.
40	Mats	-	-	-	300	3	½	
41	Coarse cloth	2	-	-	91	318	½	
42	Palmira leaves	4	-	-	3,600	7	1	
43	Hides	5	-	-	889	445	2	
44	Casks with beer	2	-	-	23	920	23	
45	Ghee dubbers	2	-	-	648	10,368	33	at 4½ candies per ton.
46	Cumbalies	1	-	-	50	25	¼	
47	Oil dubbers	-	-	-	398	3,582	20	at 4½ candies per ton.
48	Turmeric	-	-	-	-	24	1	
49	Travellers, &c.	103	—	—	—	—	—	
50	Tufts	1	—	—	—	—	—	
51	Records, &c.	5	—	—	—	—	—	
52	Chunam	—	—	—	—	—	—	
53	Carpets	-	-	-	750	3,000	8	at ½ maund each
54	Iron bars	9	-	-	1,068	3,204	24	at 2 maunds each.
55	Moulding sand	1	15	-	-	15	11	at 64 - ditto.
56	Cords	4	-	19	-	578	4	at 4½ candies per ton.
57	Pilescrew	2	-	-	6	96	1	
58	Boiler	1	-	-	-	1,000	10	
59	Cask	1	-	-	4,15,000	-	5	
60	Pots	1	-	-	2,000	40	2	
61	Palankeen	2	-	-	-	-	1	
62	Fish	11	-	39	-	975	9	at candies per ton.
63	Getherchecka	2	-	12	-	24	3	at - - ditto.
64	Tamarind	3	-	32	-	256	7	at - - ditto.
65	Stag horns	3	-	-	2,449	1,225	1	
66	Buffaloe horns	4	-	-	3,966	661	3	
67	Long cloths	1	-	-	4,000	16,000	22	at 1½ maunds each.
68	Moinaties	-	-	-	80	60	¼	
69	Cocoa nuts	6	-	-	23,700	296	10	
70	Iron	12	-	78 ½	-	2,355	17 ½	at 4½ candies per ton.
71	Maurjaty beams	19	-	-	619	1,547	62	
72	Beer casks	1	—	—	—	—	—	
73	Pitch	-	-	2	-	40	½	at 4½ candies per ton.
74	Chalk	2	-	32 ½	-	487	7	at - - ditto.
75	Chairs	2	-	-	30	90	¼	
76	Bamboos	-	-	-	2,72,239	2,723	680	at 1¼ ton per 1,000.
77	Circar deep boats	255	—	—	—	—	—	
78	Paddle boat, &c.	77	—	—	—	—	—	
					TOTAL	6,63,920	18,148 ¾	

ABSTRACT STATEMENT showing the Number of BOATS passed through the *Dhowlaiswarum*, *Bobburlunka* and *Vizaiswarum* Locks, in the Year 1853.

MONTHS	Thoolabaga Channel.		Samulcottah Channel.		Rallee Channel		Apparow Channel.		TOTAL.	
	Boats.	Rafts.	Boats.	Rafts.	Boats.	Rafts.	Boats.	Rafts.	Boats.	Rafts
January - -	99	69	- -	- -	- -	- -	- -	- -	99	69
February - -	120	291	- -	- -	- -	- -	- -	- -	120	201
March - - -	154	247	- -	- -	- -	- -	- -	- -	154	247
April - - -	258	310	- -	- -	100	30	350	145	703	485
May - - -	302	129	25	2	136	36	365	351	828	518
June - - -	373	314	25	4	115	68	125	97	630	483
July - - -	360	55	79	17	38	3	21	- -	493	75
August - - -	386	174	62	15	16	- -	21	- -	485	189
September - -	292	13	56	1	25	- -	107	11	460	25
October - -	702	15	35	- -	45	- -	196	4	978	19
November - -	631	39	64	1	44	2	294	24	1,033	66
December - -	1,137	144	66	13	205	23	318	74	1,726	254
TOTAL - -	4,814	1,800	432	53	724	168	1,797	706	7,787	2,727

ABSTRACT STATEMENT showing the Number of BOATS passed through the *Dhowlaisuarum*, *Bobaranlunka* and *Vezaiseram* Locks, &c., during the Year 1854.

MONTHS.	Thoolabaga Channel.		Samulcottah Channel		Rallee Channel.		Apparow Channel.		TOTAL.	
	Boats.	Rafts	Boats.	Rafts.	Boats.	Rafts.	Boats.	Rafts	Boats.	Rafts.
January - -	750	125	59	16	274	54	296	70	1,379	273
February - -	1,034	171	99	7	267	7	162	147	1,562	332
March - - -	600	234	90	45	198	64	255	125	1,143	438
April - - -	307	29	56	- -	58	21	425	53	846	103
May - - -	651	141	- -	- -	195	42	530	165	1,385	348
June - - -	393	76	- -	- -	212	96	346	139	951	311
July - - -	629	67	66	11	155	3	398	123	1,248	204
August - - -	533	7	- -	- -	96	- -	347	1	976	8
TOTAL - -	4,897	850	370	79	1,455	287	2,768	831	9,490	2,047

Rajahmundry District, Dhowlaiswarum,
22 September 1854.

G. N. Taylor, Sub-Collector in Charge.

(II.)—STATEMENT showing the COLLECTIONS of Extra Sources in the District of *Rajahmundry*, from Fusly 1230 to 1263.

No.	ITEMS.	Fusly 1230.	Fusly 1231.	Fusly 1232.	Fusly 1233.	Fusly 1234.	Fusly 1235	Fusly 1236.
1	Salt - - - -	94,033	2,08,834	1,88,589	2,32,856	2,49,582	2,00,325	2,08,660
2	Sayer - - - -	1,19,313	1,20,534	1,26,079	1,17,480	1,35,976	1,12,689	1,29,241
3	Sea Custom - -	- -	10,834	12,823	11,497	18,792	16,078	15,712
4	Abkary - - -	47,215	44,619	42,543	42,913	42,740	45,634	47,370
5	Sundry small farms -	- -	- -	- -	- -	- -	- -	- -
6	Moturpha - - -	15,928	15,759	21,720	18,707	44,646	45,480	53,540
7	Stamp - - -	26,412	24,048	19,054	21,491	19,566	13,868	15,531
	TOTAL Rupees - -	3,02,901	4,24,628	4,10,808	4,44,944	5,11,302	4,34,074	4,70,054

(H.)—STATEMENT showing the Collections of Extra Sources in the District of *Rajahmundry*, &c.—*continued.*

No.	ITEMS	Fusly 1237.	Fusly 1238	Fusly 1239.	Fusly 1240	Fusly 1241.	Fusly 1242	Fusly 1243.
1	Salt - - - -	3,05,458	2,49,891	2,70,729	3,18,974	3,13,372	2,58,042	3,63,738
2	Sayer - - -	1,49,167	1,60,149	1,53,832	1,52,794	1,52,671	1,26,600	1,42,796
3	Sea Custom - -	9,150	16,243	15,614	13,994	12,452	12,879	11,383
4	Abkary - - -	49,656	57,799	53,766	50,763	47,597	43,096	41,469
5	Sundry small farms -	- -	- -	- -	6,499	6,313	4,105	3,562
6	Moturpha - - -	48,300	50,107	43,085	40,875	39,018	35,694	33,836
7	Stamp - - -	27,668	23,657	18,951	16,231	18,906	19,980	22,993
	TOTAL Rupees - -	5,89,399	5,57,846	5,55,977	6,00,130	5,90,329	5,00,396	6,19,777

No.	ITEMS.	Fusly 1244	Fusly 1245	Fusly 1246	Fusly 1247	Fusly 1248	Fusly 1249	Fusly 1250.
1	Salt - - - -	4,25,055	1,25,192	2,71,664	1,51,610	1,32,306	1,26,670	1,20,572
2	Sayer - - -	1,21,112	1,25,515	1,23,235	95,912	91,497	91,358	90,600
3	Sea Custom - -	13,104	14,392	14,496	17,384	13,735	12,841	8,081
4	Abkary - - -	42,969	44,960	44,090	44,599	51,220	46,230	47,299
5	Sundry small farms -	3,848	3,808	5,302	3,723	5,539	4,416	5,609
6	Moturpha - - -	35,706	38,030	45,743	46,296	40,421	38,506	38,505
7	Stamp - - -	19,585	18,238	23,109	25,871	23,262	20,479	23,011
	TOTAL Rupees - -	6,61,379	3,70,135	5,27,647	3,85,395	3,57,980	3,40,500	3,33,677

No	ITEMS	Fusly 1251.	Fusly 1252.	Fusly 1253.	Fusly 1254.	Fusly 1255.	Fusly 1256.	Fusly 1257.
1	Salt - - - -	2,59,929	2,28,565	2,80,239	1,50,417	1,50,766	2,03,131	1,90,917
2	Sayer - - -	91,394	91,605	64,761	4,276	5,820	5,276	4,544
3	Sea Custom - -	13,424	13,923	28,806	33,767	61,891	63,568	49,770
4	Abkary - - -	43,579	48,118	49,175	51,383	58,052	64,330	75,888
5	Sundry small farms -	5,766	5,809	6,990	7,492	7,702	8,270	8,892
6	Moturpha - - -	40,274	41,495	46,388	47,331	48,890	52,563	57,877
7	Stamp - - -	21,780	19,457	15,191	11,880	9,738	10,610	13,841
	TOTAL Rupees - -	4,76,146	4,48,972	4,91,550	3,06,546	3,42,859	4,07,748	4,01,729

No	ITEMS.	Fusly 1258.	Fusly 1259	Fusly 1260.	Fusly 1261.	Fusly 1262	Fusly 1623.
1	Salt - - - -	1,86,822	2,00,160	1,78,496	2,13,945	2,56,692	2,24,461
2	Sayer - - -	4,558	5,208	3,296	3,476	4,840	4,990
3	Sea Custom - -	35,645	35,424	34,534	35,577	42,736	35,365
4	Abkary - - -	88,395	80,941	75,975	80,707	75,105	81,965
5	Sundry small farms -	9,136	9,553	9,772	10,269	12,451	10,566
6	Moturpha - - -	50,972	54,927	56,089	55,214	58,588	52,732
4	Stamp - - -	15,966	14,872	16,562	16,517	14,835	16,016
	TOTAL Rupees - -	3,91,494	4,01,085	3,74,724	4,15,705	4 65,247	4,26,095

Rajahmundry District, Dowlaiswarum,
22 September 1854.

G. N. Taylor,
Sub-Collector in Charge.

(J.)—STATEMENT showing the Extent of LAND irrigated by *Godavery* in Fusly 1263 from Amildar's Account of *Rajahmundry* District.

Number.	TALOOKS.	GOVERNMENT.									PROPRIETARY.		TOTAL.	
		TOTAL AMARKUM.		TOTAL WATERED IN FUSLY 1263.				VALUE OF ESTIMATED PRODUCE.			Land Watered in Fusly 1263	Value of Estimated Produce.	Land of Columns 7 and 11.	Value of Estimated Produce, 10 and 12 Columns
		Extent of Jeroyti Land.	Shist.	JEROYTI.		Enam Land.	Total Land of Columns 4 and 6.	Jeroyti.	Enam.	TOTAL.				
				Extent of Land.	Shist.									
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
		Pooties.	*Rs.*	*Ps.*	*Rs.*	*Ps.*	*Ps.*	*Rs.*	*Rs.*	*Rs.*	*Ps.*	*Rs.*	*Ps.*	*Rs.*
1	Kota Ramachendra-purum - -	- -	- -	1,731	68,505	1,517	3,248	3,53,167	2,35,113	5,88,270	462	82,614	3,710	6,70,894
2	Nagarum - -	- -	- -	410	16,906	238	648	87,070	36,890	1,23,960	- -	- -	648	1,23,960
3	Kapaverum - -	- -	- -	774	33,105	443	1,217	1,75,890	68,753	2,44,643	- -	- -	1,217	2,44,643
4	Bickavole - -	- -	- -	1,937	67,026	767	2,704	5,11,133	1,18,877	6,30,010	- -	- -	2,704	6,30,015
5	Rally - - -	- -	- -	2	69	1	3	550	155	705	72	13,160	75	13,860
6	Amalapore - -	- -	- -	119	3,421	- -	119	32,753	- -	32,753	1 ½	413	120 ½	33,166
7	Gittapoor - -	- -	- -	- -	- -	- -	- -	- -	- -	- -	1,791	4,13,438	1,791	41,343
8	Coringa - - -	- -	- -	- -	- -	- -	- -	- -	- -	- -	31 ½	6,873	31 ½	6,873
	Total - -	- -	- -	4,973	1,89,032	2,966	7,939	11,60,563	4,59,788	16,20,351	2,358	5,16,498	10,297	21,36,849
	SUB-DIVISION:													
1	Mogultoor - -	5,333	1,60,096	1,100	38,119	237	1,337	2,60,089	36,735	2,96,824	10	2,617	1,347	2,99,441
2	Wondy - - -	5,904	1,43,095	3,922	1,06,004	1,044	4,966	9,45,415	1,61,886	11,07,301	- -	- -	4,966	11,07,301
3	Tanku - - -	5,219	1,76,316	300	12,307	267	567	63,880	41,405	1,04,785	- -	- -	367	1,04,785
	Total - -	16,456	4,81,307	5,322	1,56,430	1,548	6,870	12,68,884	2,49,026	15,08,910	10	2,617	6,880	15,11,527
	GRAND TOTAL - -	- -	- -	10,295	3,45,462	4,517	14,809	24,29,447	6,99,814	31,29,612	2,368	5,19,115	17,177	36,48,376

Rajahmundry District, Dowlaiswaram,
22 September 1854.

G. N. Taylor,
Sub Collector in Charge.

(K.)—STATEMENT showing the Actual COLLECTIONS within each Fusly, both Current and Arrears,

No.	A. D.	Fusly.	Land Revenue Demand.	LAND REVENUE COLLECTIONS.									EXTRA SOURCES.		
				Zemindary.			Government.			Total.			Salt, Abkarry, &c.		
				Current.	Arrears.	Total.	Current.	Arrears.	Total.	Current.	Arrears.	Total.	Current.	Arrears.	Total.
1	1820-21	1230	18,67,837	15,20,001	[illegible]	16,24,566	1,62,375	52,090	2,14,465	16,82,376	1,56,655	18,39,031	1,83,234	4,284	1,87,51
2	1821-22	1231	18,87,741	14,82,963	[illegible]	16,30,751	1,94,872	31,995	2,26,867	16,77,836	1,79,783	18,57,619	3,01,753	4,417	3,06,17
3	1822-23	1232	18,32,542	14,84,950	[illegible]	16,62,604	1,43,201	27,632	1,70,833	16,28,151	2,05,286	18,33,437	2,82,438	2,931	2,85,369
4	1823-24	1233	18,62,585	14,22,492	[illegible]	15,90,392	1,50,058	9,149	1,59,207	15,72,550	1,77,049	*17,49,599	3,23,125	3,460	3,26,585
5	1824-25	1234	19,08,953	15,69,015	[illegible]	18,05,645	2,38,427	25,207	2,63,634	18,07,442	2,61,837	20,69,279	3,74,837	4,495	3,79,33
6	1825-26	1235	18,68,258	16,02,207	[illegible]	16,90,755	1,93,333	17,445	2,10,778	17,95,540	1,05,993	19,01,533	3,16,477	2,782	3,19,259
7	1826-27	1236	19,17,415	16,29,793	[illegible]	17,64,019	2,53,556	11,588	2,65,144	18,83,349	1,45,814	20,29,163	3,46,893	1,768	3,48,661
8	1827-28	1237	18,54,842	15,52,968	[illegible]	15,98,778	2,03,547	5,322	2,08,869	17,56,515	49,132	18,05,647	4,26,548	1,211	4,27,759
9	1828-29	1238	18,95,209	15,80,116	[illegible]	16,85,546	2,40,221	2,536	2,42,757	18,20,337	1,07,966	19,28,303	3,97,123	1,101	3,98,22
10	1829-30	1239	18,51,682	15,15,790	[illegible]	15,93,429	1,76,723	6,640	1,83,363	16,92,513	84,279	17,76,792	4,06,836	2,071	4,08,90
11	1830-31	1240	18,79,826	14,43,532	[illegible]	15,48,643	1,93,144	15,692	2,08,836	16,36,676	1,20,803	17,57,479	4,46,301	8,608	4,54,909
12	1831-32	1241	18,22,760	11,38,924	[illegible]	12,99,044	1,56,141	30,690	1,86,831	12,95,065	1,90,810	14,85,875	4,25,726	6,271	4,31,997
13	1832-33	1242	17,17,017	9,17,338	[illegible]	12,58,230	1,13,443	7,068	1,20,511	10,30,781	3,77,960	*14,08,741	3,68,254	7,496	3,75,75
14	1833-34	1243	18,05,172	12,82,713	[illegible]	16,65,742	3,61,233	29,894	3,91,127	16,48,946	4,12,923	20,56,869	4,84,928	15,172	5,00,10
15	1834-35	1244	18,54,635	13,28,905	[illegible]	15,77,353	3,72,995	15,221	3,88,216	17,01,900	2,63,669	19,65,569	5,35,982	11,477	5,47,4
16	1835-36	1245	17,69,137	11,90,491	[illegible]	[illegible]	3,15,116	18,320	3,33,436	15,05,607	82,954	15,88,561	2,36,483	9,567	2,46,0
17	1836-37	1246	17,66,524	11,46,708	[illegible]	[illegible]	3,22,346	28,955	3,51,301	14,69,054	1,55,203	16,24,257	3,98,861	9,220	4,08,08
18	1837-38	1247	17,85,083	11,43,526	[illegible]	13,96,714	3,35,897	13,396	3,49,293	14,79,423	2,66,584	17,46,007	2,89,034	9,634	2,98,668
19	38-39	1248	17,38,582	6,80,556	[illegible]	10,98,956	2,68,095	2,548	2,70,643	9,48,651	4,20,948	*13,69,599	2,62,433	4,488	2,66,921
20	1839-40	1249	17,75,371	7,79,725	[illegible]	9,86,164	3,87,791	21,636	4,09,427	11,67,519	2,28,075	13,95,591	2,54,244	5,152	2,59,396
21	1840-41	1250	17,41,289	7,68,574	[illegible]	9,94,299	3,99,455	11,123	4,10,578	11,68,029	2,36,848	14,04,877	2,35,819	4,788	2,40,607
22	1841-42	1251	17,63,864	8,66,975	[illegible]	11,18,524	4,87,118	16,624	5,03,742	13,54,093	2,68,173	16,22,266	3,79,325	6,363	3,85,688
23	1842-43	1252	17,53,802	9,44,281	[illegible]	10,45,562	4,54,605	10,598	4,65,203	13,98,886	1,11,879	15,10,765	3,54,416	6,401	3,60,817
24	1843-44	1253	17,07,954	7,39,224	[illegible]	7,98,307	4,15,548	18,181	4,33,729	11,54,772	77,264	*12,32,036	4,25,497	3,641	4,29,138
25	1844-45	1254	17,69,983	8,29,453	[illegible]	12,65,748	7,44,347	9,777	7,54,124	15,73,800	4,46,072	20,19,872	3,00,231	6,182	3,06,413
26	1845-46	1255	17,68,138	7,06,283	[illegible]	7,85,688	8,03,182	60,330	8,63,512	15,09,465	1,39,735	16,49,200	3,35,677	4,342	3,40,019
27	1846-47	1256	18,25,827	7,81,922	[illegible]	9,63,780	9,98,988	52,209	10,51,197	17,80,910	2,34,067	20,14,977	4,04,237	3,090	4,07,327
28	1847-48	1257	18,75,525	5,88,850	[illegible]	8,24,936	12,52,276	7,073	12,59,349	18,41,126	2,43,159	20,84,285	4,05,617	2,417	4,08,034
29	1848-49	1258	19,31,299	5,66,400	[illegible]	6,34,381	13,02,946	1,745	13,04,691	18,69,346	69,726	19,39,072	3,89,062	389	3,89,451
30	1849-50	1259	19,44,806	5,27,617	[illegible]	6,03,721	12,34,970	5,578	12,40,548	17,62,587	81,682	*18,44,269	3,94,204	1,789	3,95,993
31	1850-51	1260	19,91,485	5,72,687	[illegible]	6,36,202	13,33,507	39,198	13,72,705	19,06,194	1,32,713	20,38,907	3,72,880	4,686	3,77,566
32	1851-52	1261	20,45,537	5,55,475	[illegible]	5,91,267	14,13,818	27,623	14,41,441	19,69,293	63,415	20,32,708	4,11,337	2,885	4,14,229
33	1852-53	1262	20,67,116	5,58,391	[illegible]	5,99,794	14,16,444	19,025	14,35,469	19,74,835	60,428	*20,35,263	4,44,496	17,645	4,62,141
34	1853-54	1263	20,55,261	5,47,242	[illegible]	5,79,245	14,24,726	15,134	14,39,860	19,71,968	47,137	20,19,105	4,10,023	11,082	4,21,105

* Years marked thus were remarkable either as years of drought or of heavy inundations. The effect of each upon the revenue is worthy of note.

ll Items of Revenue in the *Rajahmundry* District, from Fusly 1230 to 1263, inclusive.

EXTRA SOURCES.						GRAND TOTAL.			Price of Paddy per Garce.	Total Amount of Money actually spent in the District.	Names of Collectors.	REMARKS On the State of the Season, &c.	
Sayer.			TOTAL.										
Current.	Arrears.	Total.	Current.	Arrears.	Total.	Current.	Arrears.	TOTAL.					
14	- -	1,19,314	3,02,548	4,284	3,06,832	19,84,924	1,60,939	21,45,863	[illegible]	[illegible]	Mr. Robertson	Ordinary years.	
33	- -	1,20,533	4,22,286	4,417	4,26,703	21,00,122	1,84,200	22,84,322	[illegible]	[illegible]			
079	- -	1,26,079	4,08,517	2,931	4,11,448	20,36,668	2,08,217	22,44,885	100	[illegible]		Sir Thomas Munro, visited the district; exports and extra sources high.	
063	- -	1,08,563	4,31,688	3,460	4,35,148	20,04,238	1,80,509	21,84,747	137	[illegible]		Famine.	
435	8,890	1,26,325	4,92,272	13,385	5,05,657	22,99,714	2,75,222	25,74,936	170	[illegible]	Mr. Kindersly	Good year; crops abundant.	
108	15,827	1,20,935	4,21,585	18,609	4,40,194	22,17,125	1,24,602	23,41,727	117	[illegible]	Mr. Hanbury	Ordinary year; prices still very high.	
558	- -	1,26,558	4,73,451	1,768	4,75,219	23,56,800	1,47,582	25,04,382	[illegible]	[illegible]	Messrs. Gardiner, Bayard, and Ansley.	Produce abundant.	
383	2,825	1,30,708	5,54,431	4,036	5,58,467	23,10,946	53,168	23,64,114	73	[illegible]	Mr. Ansley	Ordinary year; large balance of peishcush.	
929	21,283	1,62,212	5,38,052	22,384	5,60,436	23,58,389	1,30,350	24,88,739	[illegible]	[illegible]		Seasonable rains; factories abolished, on which eight lacs was the average expenditure	
197	18,358	1,56,555	5,45,033	20,429	5,65,462	22,37,546	1,04,708	23,42,254	[illegible]	[illegible]	Mr. Ansley and Crawly	Insufficient rain.	
328	10,378	1,47,706	5,83,629	18,986	6,02,615	22,20,305	1,39,789	23,60,094		[illegible]	Mr. Crawly	Favourable year; produce large.	
710	17,187	1,60,897	5,69,436	23,458	5,92,894	18,64,501	2,14,268	20,78,769		[illegible]		Abundant rain and hurricane.	
508	9,467	1,26,975	4,85,762	16,963	5,02,725	15,16,543	3,94,923	19,11,466		[illegible]		Famine and high floods and storm.	
900	5,850	1,34,750	6,13,828	21,022	6,34,850	22,57,774	4,33,945	26,91,719	[illegible]	[illegible]		Continued dearth; prices enormous; revenue realised by Asarah system. (Largest annual revenue ever collected.)	
,859	13,647	1,30,506	6,52,841	15,124	6,77,965	23,54,741	2,88,793	26,43,534	[illegible]	[illegible]		Ordinary year.	
,819	3,425	1,27,244	3,60,302	12,992	3,73,294	18,65,909	95,946	19,61,855	63	[illegible]	Messrs. Lewin and Grant	Insufficient rain.	Average value of annual export for these 10 years was only 5½ lacs.
,169	1,977	1,24,140	5,21,030	11,197	5,32,227	1,990,084	1,66,400	21,56,484	81	[illegible]	Mr. Grant	Unseasonable ditto.	
,911	1,416	97,327	3,84,345	11,050	3,95,995	18,64,368	2,77,634	21,42,002	89	[illegible]	Mr. G. A. Smith	Collections included 1,15,597; surplus year in Pittapoor zemindary.	
91,497	95	91,592	3,53,930	4,583	3,58,513	13,02,581	4,25,531	17,28,112	[illegible]	[illegible]		Hurricane and inundation of sea, causing much damage; extreme distress prevailed in this and following year.	
,080	20	89,100	3,43,324	5,172	3,48,496	15,10,840	2,33,247	17,44,087	110	[illegible]		Scanty rain.	
90,599	22	90,621	3,26,418	4,810	3,31,228	14,94,447	2,41,658	17,36,105	102	[illegible]		Seasonable weather; abundant crops, but large imports of rice from Arracan.	
,162	20	91,182	4,70,487	6,383	4,76,870	18,24,580	2,74,556	20,99,136	93	[illegible]			
91,582	26	91,608	4,45,998	6,427	4,52,425	18,44,884	1,18,306	19,63,190	57	[illegible]		Ordinary seasons.	
,660	7	64,667	4,90,157	3,648	4,93,805	16,44,929	80,912	17,25,841	53	[illegible]	Mr. Smith, Sir H. C. Montgomery, Bart., and Mr. Prendergast.	Sayer abolished; great destruction from several floods of the Godavery.	
,222	- -	4,222	3,04,453	6,182	3,10,635	18,78,253	4,52,254	23,30,507	56	[illegible]	Mr. J. Bird (acting)	Favourable year.	
,820	- -	5,820	3,41,497	4,342	3,45,839	18,50,962	1,44,077	19,95,639	55	[illegible]	Mr. T. Prendergast	Scanty rain, several estates bought in.	
194	- -	5,194	4,09,431	3,090	4,12,521	21,90,341	2,37,157	24,27,498	56	[illegible]		Abundant produce; joint rent; export of rice. Annicut commenced.	
,330	- -	4,330	4,09,947	2,417	4,12,364	22,51,073	2,45,576	24,96,649	70	[illegible]		Ditto. Bicavole and Kapaveram receive water.	
,548	- -	4,548	3,93,610	389	3,93,999	22,62,956	70,115	23,33,071		[illegible]		Indifferent year. Messrs. Arbuthnot & Co.'s sugar factory established.	
,206	- -	5,706	3,99,411	1,789	4,01,199	21,61,997	83,471	22,45,468	[illegible]	[illegible]		Heavy floods and inundation; considerable loss.	
,283	- -	3,283	3,76,163	4,686	3,80,849	22,82,357	1,37,399	24,19,756	[illegible]	[illegible]		High floods; poonasa failed; rice crop abundant.	
,476	- -	3,476	4,14,813	2,885	4,17,698	23,84,106	66,300	24,50,406	[illegible]	[illegible]		Ordinary year; rain abundant.	
,559	- -	4,559	4,49,055	17,645	4,66,700	24,23,890	78,073	25,01,963		[illegible]		Very high floods; damage inconsiderable. †	
,858	131	4,989	4,14,881	11,213	4,26,094	23,86,849	58,350	24,45,199		[illegible]		Drought, and consequent high prices. †	

† The Accountant General's Bills, drawn on the Treasury in each of these two years, amounted to nearly [illegible] rupees, and the annicut expenditure was very large.

G. N. Taylor, Sub-Collector in Charge.

(Z.)—STATEMENT showing the DEMAND, COLLECTION, and BALANCE of the GOVERNMENT ESTATES in the District

	Names of the Channels.	Number.	ITEMS.	FUSLY 1257.				
				Kist of Fusly preceding the Construction of the Annicut, or Fusly 1256.		Kist of Fusly 1257, on the Lands on which the Channel Water availed.	Comparison between Columns 3 and 4.	
				Land. 2.	Kist. 3.	4.	Increase. 5	Decrease. 6
				P. t. m.	C. Rs. a. p.	C. Rs. a. p	C. Rs. a. p	C. Rs p.
Lands Irrigated by the Channels	Thoohabaga Channel.	1	Dry land, converted into wet	—	—	—	—	—
		2	Usual wet, irrigated by the channel water	- -	- - -	- - -	- - -	- - -
			Total	- -	- - -	- - -	- - -	- - -
	Samulcottah Channel.	1	Dry land, converted into wet	- -	- - -	- - -	- - -	- - -
		2	Usual wet, irrigated by the channel water	42 19 8	1,862 6 –	2,662 3 4	799 13 4	- - -
			Total	42 19 8	1,862 6 –	2,662 3 4	799 13 4	- - -
	TOTAL.	1	Dry land, converted into wet	- -	- - -	- - -	- - -	- - -
		2	Usual wet, irrigated by the channel water	42 19 8	1,862 6 –	2,662 3 4	799 13 4	- - -
			Total	42 19 8	1,862 6 –	2,662 3 4	799 13 4	- - -
	Teervahjasty on the Enams	1	Thoohabaga Channel	—	—	—	—	—
		2	Samulcottah ditto	—	—	—	—	—
			Total	—	—	—	—	—
			GRAND TOTAL	- -	1,862 6 –	2,662 3 4	799 13 4	- - -
	Deduct Jeeroytee and Enam lands occupied under the channel.	1	Amount of remission allowed on account of the lands of Jeroytee and Enam, occupied under channels	—	—	—	—	—
		2	Enams for fusly 1255 to 1261	—	—	—	—	—
			Total	—	—	—	—	—
			Remainder	—	—	—	—	—
Revenue of the whole District	On account of the old estates.	1	Lands not under the influence of the channels	- -	12,01,192 4 4	12,52,472 3 2	51,279 14 10	- - -
		2	Lands under the influence of the channels	- -	1,862 6 –	2,662 3 4	799 13 4	- - -
			Total	- -	12,03,054 10 4	12,55,134 6 6	52,079 12 2	- - -
	On account of the estates since reverted from Fusly 1257.	1	Lands not under the influence of the channels	—	—	—	—	—
		2	Lands under the influence of the channels	—	—	—	—	—
			Total	—	—	—	—	—
			GRAND TOTAL	- -	12,03,054 10 4	12,55,134 6 6	52,079 12 2	- - -
			Deduct the amount paid to the proprietors, as well as the sum given credit to the Peishcush, being the collections made prior to the sale of the estate	—	—	—	—	—
			Remainder:					
			Government estates	- -	12,03,054 10 4	12,55,134 6 6	52,079 12 2	- - -
			Proprietary estates	- -	6,20,391 6 2	6,20,321 6 2	- - -	- - -
			Total	- -	18,23,446 – 6	18,75,525 12 8	52,079 12 2	- - -
			Balance:					
			Government estates	- -	- - -	24 – –	- - -	- - -
			Remissions	- -	- - -	2,052 2 3	- - -	- - -
			Total	- -	- - -	2,076 2 3	- - -	- - -
			Proprietary estates	—	—	—	—	—
			GRAND TOTAL	- -	- - -	2,076 2 3	- - -	- - -
			Collections:					
			Government estates	- -	- - -	12,52,085 4 3	- - -	- - -
			Proprietary estates	- -	- - -	6,20,391 6 2	- - -	- - -
			Total	- -	- - -	18,73,449 10 5	- - -	- - -
			Centage	- -	- - -	99 14 3	- - -	- - -

of *Rajahmundry*, as well as the Increase of the Kist of the Lands Irrigated by the Channels from Fusly 1257 to 1262.

	FUSLY 1258.					
Centage. 7	Kist of the Fusly preceding the Construction of the Annicut, or Fusly 1256.		Kist of Fusly 1258, on the Lands on which the Channel Water availed 10	Comparison between Columns 9 and 10.		Centage 13.
	Land 8.	Kist 9		Increase 11	Decrease. 12	
C Rs a p	*P t m*	*C Rs a. p*	*C Rs. a p.*	*C Rs a p*	*C Rs a p*	*C. Rs. a. p.*
- - -	190 10 4	4,221 - 4	5,360 5 7	1,139 5 3	- - - -	26 15 6
- - -	190 10 4	4,221 - 4	5,360 5 7	1,139 5 3	- - - -	26 15 6
- - -	20 6 4	588 5 2	907 5 -	318 15 10	- - - -	52 9 7
42 14 6	130 1 4	5,525 6 10	6,468 15 11	943 9 1	- - - -	17 1 1
42 14 6	150 7 8	6,113 12 -	7,376 4 11	1,262 8 11	- - - -	20 11 6
- - -	20 6 4	588 5 2	907 5 -	318 15 10	- - - -	52 9 7
42 14 6	320 11 8	9,746 7 2	11,829 5 6	2,082 14 4	- - - -	21 5 6
42 14 6	340 17 12	10,334 12 4	12,736 10	2,401 14 2	- - - -	23 3 9
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
42 14 6	340 17 12	10,334 12 4	12,736 10 6	2,401 14 2	- - - -	23 3 9
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
4 4 4	- - -	12,01,192 4 4	12,98,170 11 11	96,978 7 7	- - - -	8 1 2
42 15 1	- - -	10,334 12 4	12,736 10 6	2,401 14 2	- - - -	23 3 10
4 5 3	- - -	12,11,527 - 8	13,10,907 6 5	99,380 5 9	- - - -	8 3 4
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
4 5 3	- - -	12,11,527 - 8	13,10,907 6 5	99,380 5 9	- - - -	8 3 4
—	—	—	—	—	—	—
4 5 3	- - -	12,11,527 - 8	13,10,907 6 5	99,380 5 9	- - - -	8 3 4
- - -	- - -	6,20,391 6 2	6,20,391 6 2	—	—	—
- - -	- - -	18,31,918 6 10	19,31,298 12 7	99,380 5 9	—	—
- - -	- - -	- - - -	24 - -	—	—	—
- - -	- - -	- - - -	2,371 14 1	—	—	—
- - -	- - -	- - - -	2,395 14 1	—	—	—
—	—	—	—	—	—	—
- - -	- - -	- - - -	2,395 14 1	—	—	—
- - -	- - -	- - - -	13,08 511 8 4	—	—	—
- - -	- - -	- - - -	6,20,391 6 2	—	—	—
- - -	- - -	- - - -	19,28,902 14 6	—	—	—
- - -	- - -	- - - -	99 14 -	—	—	—

(Z.)—STATEMENT showing the Demand, Collection, and Balance of the Government Estates in the District of *Rajahmundry*,

Description	Names of the Channels.	Number.	ITEMS.	FUSLY 1259.				
				Kist of the Fusly preceding the construction of the Annicut, or Fusly 1256.		Kist of Fusly 1259, on the Lands on which the Channel Water availed.	Comparison between Columns 15 and 16.	
				Land. 14	Kist. 15.	16.	Increase. 17.	Decrease. 18.
				P. t. m.	*C. Rs. a. p.*	*C Rs. a. p*	*C Rs. a. p*	*C. Rs. a. p.*
Lands irrigated by the Channels	Thooliabaga Channel.	1	Dry land converted into wet - - -	97 16 1	2,050 11 5	2,634 – 7	583 5 2	- - -
		2	Usual wet, irrigated by the channel water -	20 15 10	284 7 10	460 10 7	176 2 9	- - -
			Total - - -	118 11 11	2,335 3 3	3,094 11 2	759 7 11	- - -
	Samulcottah Channel.	1	Dry land converted into wet - - -	81 18 11	1,115 5 7	2,493 7 8	1,378 2 1	- - -
		2	Usual wet, irrigated by the channel water -	505 5 15	18,762 14 9	25,103 1 –	6,340 2 3	- - -
			Total - - -	587 4 10	19,878 4 4	27,596 8 8	7,718 4 4	- - -
	TOTAL.	1	Dry land converted into wet - - -	179 14 12	3,166 1 –	5,127 8 3	1,961 7 3	- - -
		2	Usual wet, irrigated by the channel water -	526 1 9	19,047 6 7	25,563 11 7	6,516 5 –	- - -
			Total - - -	705 16 5	22,213 7 7	30,691 3 10	8,477 12 3	- - -
	Teervahjasty on the Enams.	1	Thooliabaga Channel - - - - -	—	—	—	—	—
		2	Samulcottah ditto - - - - - -	—	—	—	—	—
			Total - - -	—	—	—	—	—
			GRAND TOTAL - - -	705 16 5	22,213 7 7	30,691 3 10	8,477 12 3	—
	Deduct Jeeroytee and Enam lands occupied under the channel.	1	Amount of remission allowed on account of the lands of Jeroytee and Enam, occupied under channels - - - - -	—	—	—	—	—
		2	Enams for fusly 1255 to 1261 - - -	—	—	—	—	—
			Total - - -	—	—	—	—	—
			Remainder - - -	—	—	—	—	—
Revenue of the whole District.	On account of the old estates.	1	Lands not under the influence of the channels	- -	12,01,192 4 4	12,95,114 12 10	93,922 8 6	- - -
		2	Lands under the influence of the channels -	- -	22,213 7 7	30,691 3 10	8,477 12 3	- - -
			Total - - -	- -	12,23,405 11 11	13,25,806 – 8	1,02,400 4 9	- - -
	On account of the estates since reverted from Fusly 1257.	1	Lands not under the influence of the channels	- -	- - -	3,491 7 3	3,491 7 3	- - -
		2	Lands under the influence of the channels -	—	—	—	—	—
			Total - - -	- -	- - -	3,491 7 3	3,491 7 3	- - -
			GRAND TOTAL - - -	- -	12,23,405 11 11	13,29,297 7 11	1,05,891 7 –	- - -
			Deduct the amount paid to the proprietors, as well as the sum given credit to the Peishcush, being the collections made prior to the sale of the estate - - -	- -	– – 2	310 – –	310 – –	—
			Remainder:					
			Government estates - - - -	- -	12,23,405 11 11	13,28,987 7 11	1,05,581 12 –	- - -
			Proprietary estates - - - - -	- -	6,20,391 6 2	6,15,819 3 2	- - -	4,572 3 –
			Total - - -	- -	18,43,797 2 1	19,44,806 11 1	1,05,581 12 –	4,572 3 –
Collection and Balance of the District.	- - -	–	Balance:					
			Government estates - - - -	- -	- - -	23 1 7	- - -	- - -
			Remissions - - - - - -	- -	- - -	53,529 10 10	- - -	- - -
			Total - - -	- -	- - -	53,552 12 5	- - -	- - -
			Proprietary estates - - - - -	—	—	—	—	—
			GRAND TOTAL - - -	- -	- - -	53,552 12 5	- - -	- - -
			Collections:					
			Government estates - - - -	- -	- - -	12,75,434 11 6	- - -	- - -
			Proprietary estates - - - - -	- -	- - -	6,15,819 3 2	- - -	- - -
			Total - - -	- -	- - -	18,91,253 14 8	- - -	- - -
			Centage - - -	- -	- - -	97 3 11	- - -	- - -

as well as the increase of the Kist of the Lands irrigated by the Channels from Fusly 1257 to 1262—*continued.*

FUSLY 1260.						
Centage. 19.	Kist of the Fusly preceding the Construction of the Annicut, or Fusly 1256. Land. 20.	Kist of the Fusly preceding the Construction of the Annicut, or Fusly 1256. Kist. 21.	Kist of Fusly 1260, on the Lands on which the Channel Water availed. 22.	Comparison between Columns 21 and 22. Increase 23	Comparison between Columns 21 and 22. Decrease 24	Centage 25
C Rs. a p.	*P. t. m.*	*C Rs a p*	*C Rs. a. p.*	*C Rs a p*	*C Rs a. p*	*C Rs a. p*
28 7 -	—	—	—	—	—	—
31 13 6	170 3 2	3,818 10 8	5,007 11 7	1,189 - 11	- - - -	31 10 11
32 7 6	170 3 2	3,818 10 8	5,007 11 7	1,189 - 11	- - - -	31 10 11
123 10 6	67 8 6	983 3 9	2,096 15 1	1,113 11 4	- - - -	113 4 6
32 3 1	585 5 14	20,999 2 4	30,670 7 4	9,671 5 -	- - - -	46 - 10
38 8 6	652 14 4	21,982 6 1	32,767 6 5	10,785 - 4	- - - -	49 - 6
61 15 6	67 8 6	983 3 9	2,096 15 1	1,113 11 4	- - - -	113 4 6
34 3 6	755 9 0	24,917 13 -	35,678 2 11	10,860 5 11	- - - -	43 12 7
33 10 6	822 17 6	25,801 - 9	37,775 2 -	11,974 1 3	- - - -	46 6 6
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
33 10 6	822 17 6	25,801 - 9	37,775 2 -	11,974 1 3	- - - -	46 6 6
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
7 13 1	- - -	12,01,192 4 4	13,33,583 15 2	1,32,391 10 10	- - - -	11 - 4
38 2 8	- - -	25,801 - 9	37,775 2 -	11,974 1 3	- - - -	46 6 6
8 5 11	- - -	12,26,993 5 1	13,71,359 1 2	1,44,365 12 1	- - - -	11 12 3
- - -	- - -	- - - -	7,425 15 7	7,425 15 7	—	—
—	—	—	—	—	—	—
- - -	- - -	- - - -	7,425 15 7	7,425 15 7	—	—
8 - 6	- - -	12,26,993 5 1	13,78,785 - 9	1,51,791 11 8	- - - -	12 6 -
—	—	—	—	—	—	—
8 10 6	- - -	12,26,993 5 1	13,78,785 - 9	1,51,791 11 8	- - - -	12 6 -
- 11 9	- - -	6,20,391 6 2	6,12,700 3 2	- - - -	7,691 3 -	1 3 10
- - -	- - -	18,47,384 11 3	19,91,485 3 11	1,51,791 11 8	7,691 3 -	—
- - -	- - -	- - - -	23 1 7	—	—	—
- - -	- - -	- - - -	18,581 - 2	—	—	—
- - -	- - -	- - - -	18,604 1 9	—	—	—
—	—	—	—	—	—	—
- - -	- - -	- - - -	18,604 1 9	—	—	—
- - -	- - -	- - - -	13 60,180 15 -	—	—	—
- - -	- - -	- - - -	6,12,700 3 2	—	—	—
- - -	- - -	- - - -	19,72,831 2 2	—	—	—
- - -	- - -	- - - -	99 1 1	—	—	—

STATEMENT showing the Demand, Collection, and Balance of the Government Estates in the District of *Rajahmundry*,

Description.	Names of the Channels.	Number	ITEMS.	FUSLY 1261				
				Kist of the Fusly preceding the Construction of the Annicut, or Fusly 1256.		Kist of Fusly 1261, on the Lands on which the Channel Water availed	Comparison between Columns 27 and 28.	
				Land. 26	Kist. 27.	28	Increase 29	Decrease 30.
				P. t m.	*C Rs. a p.*	*C Rs a. p*	*C Rs. a p*	*C.Rs a p*
Lands irrigated by the Channels	Thoohabaga Channel.	1	Dry land, converted into wet - - -	26 15 5	488 12 –	655 8 10	166 12 10	- - -
		2	Usual wet, irrigated by the channel water -	317 19 13	8,318 13 4	10,433 13 3	2,114 15 11	- - -
			Total - - -	344 15 2	8,807 9 4	11,089 6 1	2,281 12 9	- - -
	Samulcottah Channel.	1	Dry land, converted into wet - - -	88 12 14	1,442 1 5	2,688 4 –	1,246 2 7	- - -
		2	Usual wet, irrigated by the channel water -	611 8 11	21,284 2 6	33,934 12 4	12,650 9 10	- - -
			Total - - -	700 1 9	22,726 3 11	36,623 – 4	13,896 12 5	- - -
	TOTAL - -	1	Dry land, converted into wet - - -	115 8 2	1,930 13 5	3,343 12 10	1,412 15 5	- - -
		2	Usual wet, irrigated by the channel water -	929 8 8	29,602 15 10	44,368 9 7	14,765 9 9	- - -
			Total - - -	1,044 16 10	31,533 13 3	47,712 6 5	16,178 9 2	- - -
	Teervahjasty on the Enams.	1	Toohabaga channel - - - - - -	- -	- - -	435 14 8	435 14 8	- - -
		2	Samulcottah ditto - - - - - -	- -	- - -	205 2 3	205 2 3	- - -
			Total - - -	- -	- - -	641 – 11	641 – 11	- - -
			GRAND TOTAL - - -	1,044 16 10	31,533 13 3	48,353 7 4	16,819 10 1	- - -
	Deduct Jeeroytee and Enam Lands occupied under the Channels.	1	Amount of remissions allowed on account of the lands of Jeroytee and Enam, occupied under channels - - - -	—	—	—	—	—
		2	Enams from Fusly 1255 to 1261 - -	—	—	—	—	—
			Total - - -	—	—	—	—	—
			Remainder - - -	—	—	—	—	—
Revenue of the whole District	On account of the old Estates.	1	Lands not under the influence of the channels	- -	12,01,192 4 4	13,70,513 14 10	1,69,321 10 6	- - -
		2	Lands under the influence of the channels	- -	30,933 15 1	47,512 – 2	16,578 1 1	- - -
			Total - - -	- -	12,32,126 3 5	14,18,025 15 –	1,85,899 11 7	- - -
	On account of the Estates since reverted from Fusly 1257.	1	Lands not under the influence of the channels	- -	- - -	36,437 9 10	36,437 9 10	- - -
		2	Lands under the influence of the channels -	- -	599 14 2	841 7 2	241 9 –	- - -
			Total - - -	- -	599 14 2	37,279 1 –	36,679 2 10	- - -
			GRAND TOTAL - - -	- -	12,32,726 1 7	14,55,305 – –	2,22,578 14 5	- - -
			Deduct the amount paid to the proprietors, as well as the sum given credit to the Peishcush, being the collections made prior to the sale of the estate - - - -	- -	- - -	2,425 10 9	2,425 10 9	- - -
			Remainder.					
			Government estates - - - - - -	- -	12,32,726 1 7	14,52,879 5 3	2,20,153 3 8	- - -
			Proprietary estates - - - - - -	- -	620,391 6 2	592,657 11 4	- - -	27,733 10 10
			Total - - -	- -	18,53,117 7 9	20,45,537 – 7	2,20,153 3 8	27,733 10 10
[illegible]			Balance:					
			Government estates - - - - -	- -	- - -	20,249 11 11	- - -	- - -
			Remissions - - - - - - -	—	—	—	—	—
			Total - - -	- -	- - -	20,249 11 11	- - -	- - -
			Proprietary estates - - - - -	- -	- - -	- - -	- - -	- - -
			GRAND TOTAL - -	- -	- - -	20,249 11 11	- - -	- - -
			Collections:					
			Government estates - - - -	- -	- - -	14,32,629 9 4	- - -	- - -
			Proprietary estates - - - - -	- -	- - -	5,92,657 11 4	- - -	- - -
			Total - - -	- -	- - -	20,25,287 4 8	- - -	- - -
			Cautaga - - -	- -	- - -	99 – 2	- - -	- - -

as well as the Increase of the Kist of the Lands irrigated by the Channels from Fusly 1257 to 1262—*continued.*

	FUSLY 1262					
Centage.	Kist of the Fusly preceding the Construction of the Annicut, or Fusly 1256.		Kist of Fusly 1262, on the Lands on which the Channel Water availed	Comparison between Columns 33 and 34		Centage
	Land.	Kist.		Increase.	Decrease	
31.	32	33	34	35	36	37
C Rs a p	*P t. m.*	*C Rs a. p.*	*C Rs a p*	*C Rs. a p.*	*C.Rs. a. p*	*C.Rs a p.*
32 - - 25 6 7	288 19 8 843 1 10	6,543 14 4 23,208 8 3	9 038 14 8 26,771 13 2	2,495 - 4 3,563 5 11	- - - - - - - -	38 2 2 15 5 8
25 14 6	1,132 1 2	29,752 6 7	35,810 11 10	6,058 5 3	- - - -	20 5 10
86 - 9 59 5 7	141 8 10 658 11 8	2 338 - 3 22,719 11 5	4,945 3 3 31,486 12 9	2,607 3 - 8,767 1 4	- - - - - - - -	111 7 6 38 9 6
61 2 5	800 0 2	25,057 11 8	36,432 - -	11,374 4 4	- - - -	45 6 1
83 8 2 49 14 2	430 8 2 1,501 13 2	8,881 14 7 45,928 3 8	13,984 1 11 58,258 9 11	5,102 3 4 12,330 6 3	- - - - - - - -	57 7 4 26 3 3
50 5 11	1,932 1 4	54,810 2 3	72,242 11 10	17,432 9 7	- - - -	31 9 2
- - - - - -	- - - - - -	- - - - - - - -	568 11 3 222 7 4	568 11 3 222 7 4	— —	— —
- - -	- - -	- - - -	791 2 7	791 2 7	—	—
53 5 4	- - -	54,810 2 3	73,033 14 5	18,223 12 2	- - - -	33 4 -
— —	— —	— —	— —	— —	— —	— —
—	—	—	—	—	—	—
—	—	—	—	—	—	—
14 1 6 53 9 5	- - - - - -	12,01,192 4 4 54,211 5 11	13,65,580 1 1 72,210 1 9	1,64,387 12 9 17,998 11 10	- - - - - - -	13 10 11 33 3 2
15 1 5	- - -	12,55,403 10 3	14,37,790 2 10	1,82,386 8 7	—	14 8 5
- - - 40 4 2	- - - - - -	- - - - 598 12 4	37,314 8 2 823 12 8	37,314 8 2 225 - 4	— - - - -	— 37 9 4
- - -	- - -	598 12 4	38,138 4 10	37,539 8 6	—	—
18 11 11	- - -	12,56,002 6 7	14,75,928 7 8	2,19,926 1 1	- - - -	17 8 3
—	—	—	—	—	—	—
17 13 9 4 7 6	- - - - - -	12,56,002 6 7 6,20,391 6 2	14,75,928 7 8 5,91,187 11 4	2,19,926 1 1 - - - -	- - - - 29,203 10 10	17 8 3 4 11 4
- - -	- - -	18,76,393 12 9	20,67,116 3 -	2,19,926 1 1	29,203 10 10	—
- - - —	- - - —	- - - - —	45,700 13 2 —	— —	— —	— —
- - -	- - -	- - - -	45,700 13 2	—	—	—
- - -	- - -	- - - -	793 14 4	—	—	—
- - -	- - -	- - - -	46,494 11 6	—	—	—
- - - - - -	- - - - - -	- - - - - - - -	14,30,227 10 6 5,90,393 13 -	— —	— —	— —
- - -	- - -	- - - -	20,20,621 7 6	—	—	—
- - -	- - -	- - - -	97 12 -	—	—	—

STATEMENT showing the Demand, Collection, and Balance of the Government Estates in the District of *Rajahmundry*,

Description.	Names of the Channels	Number.	ITEMS.	Total Kist of the Fusly preceding the Construction of the Annicut, or Total of Columns 3, 9, 15, 21, 27, and 33.		TOTAL.		
				Land. 38.	Kist 39.	TOTAL KIST of the Six Fuslies. 40.	Comparison between Columns 39 and 40. Increase. 41.	Decrease. 42.
				P. t m.	C.Rs. a. p.	C.Rs. a. p	C.Rs. a p.	C.Rs. a. p
Lands irrigated by the	Thoohabaga Channel	1	Dry land, converted into wet - - -	413 10 14	9,083 5 9	12,328 8 1	3,215 2 4	- - -
		2	Usual wet, irrigated by the channel water -	1,542 10 7	39,851 8 5	48,034 6 2	8,182 13 9	- - -
			Total - - -	1,956 1 5	48,934 14 2	60,362 14 3	11,428 - 1	- - -
	Samulcottah Channel.	1	Dry land, converted into wet - - -	399 14 13	6,467 - 2	13,131 3 -	6,664 2 10	- - -
		2	Usual wet, irrigated by the channel water -	2,533 12 12	91,153 11 10	1,30,326 4 8	39,172 8 10	- - -
			Total - - -	2,933 7 9	97,620 12 -	1,43,457 7 8	45,836 11 8	- - -
	TOTAL - -	1	Dry land, converted into wet - - -	813 5 10	15,550 5 11	25,459 11 1	9,909 5 2	- - -
		2	Usual wet, irrigated by the channel water -	4,076 3 4	1,31,005 4 3	1,78,360 10 10	47,355 6 7	- - -
			Total - - -	4,889 8 14	1,46,555 10 2	2,03,820 5 11	57,264 11 9	- - -
	Teervahjasty on the Enams.	1	Thoohabaga Channel - - - - -	- -	- - -	1,004 9 11	1,004 9 11	—
		2	Samulcottah ditto - - - - - -	- -	- - -	427 9 7	427 9 7	—
			Total - - -	- -	- - -	1,432 3 6	1,432 3 6	—
			GRAND TOTAL - - -	- -	1,46,555 10 2	2,05,252 9 5	†58,696 15 3	- - -
	Deduct Jeroytee and Enam Lands occupied under the Channels	1	Amount of remission allowed on account of the lands of Jeroytee and Enam, occupied under channels - - - - - -	- -	- - -	2,493 11 2	2,493 11 2	—
		2	Enams from Fusly 1255 to 1261 - -	- -	- - -	13,579 1 5	13,579 1 5	—
			Total - - -	- -	- - -	*16,072 12 7	16,072 12 7	—
			Remainder - - -	- -	- - -	- - -	42,624 2 8	—
Revenue of the whole District	On account of the old Estates.	1	Lands not under the influence of the channels	- -	72,07,153 10 -	79,15,435 11 -	7,08,282 1 -	- - -
		2	Lands under the influence of the channels -	- -	1,45,356 15 8	2,03,587 5 7	‡58,230 5 11	- - -
			Total - - -	- -	73,52,510 9 8	81,19,023 - 7	7,66,512 6 11	- - -
	On account of the Estates since reverted from Fusly 1257.	1	Lands not under the influence of the channels	- -	- - -	84,669 8 10	84,669 8 10	- - -
		2	Lands under the influence of the channels -	- -	1,198 10 6	1,665 3 10	§466 9 4	- - -
			Total - - -	- -	1,198 10 6	86,334 12 8	85,136 2 2	- - -
			GRAND TOTAL - - -	- -	73,53,709 4 2	8,205,357 13 3	8,51,648 9 1	- - -
			Deduct the amount paid to the proprietors, as well as the sum given credit to the Peishcush, being the collections made prior to the sale of the estate - - - -	- -	- - -	2,735 10 9	2,735 10 9	—
			Remainder Government estates - - - - -	- -	73,53,709 4 2	82,02,622 2 6	8,48,912 14 4	- - -
			Proprietary estates - - - -	- -	37,22,348 5 -	36,53,147 9 4	- - -	69,200 11 8
			Total - - -	- -	1,10,76,057 9 2	11,855,769 11 10	8,48,912 14 4	69,200 11 8
Collection and Balance of the District.						Deduct Decrease - - -	69,200 11 8	—
						Net - - -	7,79,712 2 8	
			Balance Government estates - - - - - -	- -	- - -	66,044 12 3	—	—
			Remissions - - - - - -	- -	- - -	76,534 11 4	—	—
			Total - - -	- -	- - -	1,42,579 7 7	—	—
	- - -	-	Proprietary estates - - - - - -	- -	- - -	793 14 4	—	—
			GRAND TOTAL - - -	- -	- - -	1,43,373 5 11	—	—
			Collections Government estates - - - - - -	- -	- - -	80,60,042 10 11	—	—
			Proprietary estates - - - - -	- -	- - -	36,52,353 11 -	—	—
			Total - - -	- -	- - -	11,712,396 5 11	—	—
			Centage - - -	- -	- - -	98 12 8	—	—

Rajahmundry District, Cocanada, 22 September 1854.

as well as the Increase of the Kist of the Lands irrigated by the Channels, from Fusly 1257 to 1262—*continued.*

Centage. 43.	Deduct the Amount of Increase at the Per-centage derived on the Lands of the whole District not under the Influence of the Channels from that derived on the Lands under their Influence 44.	Net Increase after deducting the Amount in Column 44 from that of 41 45.	Per-centage of the Increase between Columns 39 and 45. 46.
C Rs a p.	*C.Rs. a. p.*	*C Rs. a. p*	*C Rs a. p.*
35 11 7	—	—	—
29 8 11	—	—	—
23 5 11	—	—	—
103 9 -	—	—	—
42 14 6	—	—	—
46 15 6	—	—	—
63 11 9	—	—	—
36 2 5	—	—	—
39 1 3	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
40 - -	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
9 13 3	- - - -	7,08,282 1 -	9 13 1
40 - 11	5,722 15 2	52,507 6 9	36 2 -
10 6 9	5,722 15 2	7,60,789 7 9	10 5 7
38 15 -	- - - -	84,669 8 10	—
- - -	45 13 8	420 11 8	35 1 7
11 9 4	45 13 8	85,090 4 6	—
- - -	5,768 12 10	8,45,879 12 3	11 8 -
—	—	—	—
11 8 8	—	—	—
1 13 9	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

	C Rs a p
Of the old estates - - - -	‡58,230 5 11
Estates since reverted to Government -	§466 9 4
	†58,696 15 3

	C.Rs a p	
Remissions allowed in each Fusly out of the demand -	2,493 11 2	
Compensation to be paid to the enamdars, viz · of the Collector's Division, for sanction of Government, which has already been received - - -	12,423 - 7	
Ditto, Sub-collector's Division, ditto, not been received - - - -	1,156 - 10	
		13,579 1 5
		*16,072 12 7

G. N. Taylor, Sub-Collector in Charge.

MEMORANDUM on Guntoor and the Krishna Water Works, by Mr. *Stokes*.

Design of this paper.

1. The important hydraulic works recently undertaken on the Godavery and Krishna rivers, have attracted a considerable share of public attention. In a pamphlet by a member of the civil service of high standing, professing a full acquaintance with the subject, the value of these works has been disputed, and the wisdom of Government in sanctioning them impugned. It has, therefore, been thought well to draw up some account of them, from authentic sources, for the information of those who have not access to official records.

2. It is scarcely necessary to explain, that on both rivers the works consist of a solid masonry dam or wear, called in these parts, Annicut. thrown across the stream to turn its waters over the subjacent country, for agricultural purposes and navigable canals.

To give information about Guntoor and the Krishna works.

3. The design of the following paper is to supply this information, so far as relates to the district of Guntoor.

Too late to stop the outlay.

4. True it is, that if Government have been misled, it is too late now to retrieve the error. The money has been spent, and the works so far completed, that in the Godavery Delta their incipient results are patent to public observation, and in that of the Krishna they are beginning to take effect.

Objections.

5. The objections raised to the Krishna works may be thus stated·

That the project was hastily adopted; that the over-sanguine recommendations of the engineers, especially Colonel Cotton, were too implicitly accepted; that the calculations by which it was supported were loose and fallacious, the preliminary inquiries not having been duly substantiated on the spot by revenue officers of local experience; that the Delta consists of black soil, unsuited to irrigation, to which the people are consequently believed to be indifferent; and that the proved failure of certain such works in that locality forbids the anticipation of more favourable results from these costlier schemes; while another line of argument proceeds upon the position that, without these works, the rental of the Guntoor district, at no distant period, exceeded its present average by a sum at least equal to their probable net profits, and that, as its depression has resulted mainly from bad management, a vigorous executive will suffice for its restoration without this vast and hazardous outlay, which, under such circumstances, is a gratuitous waste of the public funds. This assumption is represented to be borne out by the financial improvement which did actually follow the reforms introduced in Guntoor by the Commissioner in 1845, before these works were commenced. The objector indeed seems to say, further, that no profit is to be claimed from the works until the rental shall exceed its former standard.

Topography, history, works.

6. To furnish the means of testing these objections, and at the same time to throw light on some important questions connected with the author's argument, and with our Madras revenue administration, of late so much canvassed, it may be found convenient to notice in their order, first, the local features of the province, more especially as they influence the revenue; second, the history of its more recent administration; and, lastly, the works themselves. For the purpose of illustration, there are appended a sketch map of Guntoor, showing its revenue divisions, with the position of the new channels, a drawing of the wear, and tables of such available statistics of the district as serve to show its annual condition for a series of years, with explanatory remarks and deductions.

Topography.
North-western tracts.

7. The topographical features of Guntoor may be traced as follows: in the north-western tracts, which include the Palnad, and what are called the Payacutta, on the highlands of Kurapad, Nursarowpett, and Innaconda, a large space is occupied by rugged hills, from which extend rocky or gravelly slopes, rarely fit for the plough, yet affording fine pasture for flocks, while the woody hills, with the dates that intersect them, serve as a valuable retreat for cattle during several months in the year, when they cannot be kept in the Delta. About a fifth of

the revenue is derived from grass-rents, and an equal proportion from irrigated lands under small tanks. The average rate of assessment on dry land is very moderate. The population, except in the Palnad, is thin The crops sown in the early rains in May or June are early millet and spiked millet (*holcus spicatum*), Indian hemp, sesamum, and cucumbers; and with the later rain cotton, pulse, a kind of dwarf millet, called verega, and oil-seeds, but only a small proportion of land bears two crops on the same season. The Palnad cotton is in great repute among native weavers, and it is the staple export from that quarter

Central tracts

8. Between the hill districts and the Delta the country is of an intermediate character, interspersed with several chains of hills, yet containing fine tracts of rich arable plains, flat, but not exposed to floods. The irrigation tanks are few and inconsiderable

Productions.

9 In the plains nearest the Delta in Pretepaud and Martur, tobacco and chillies are grown extensively, and, being in demand for export, prove very remunerating. The soil here is also favourable for wheat and linseed, but the cultivation of both is far more limited than might be expected for products so much in request These plants are easily killed by unseasonable rain, and hence probably are disliked by the poorer ryots, who shrink from risk.

Pasture

10. In the central talooks and the upper Delta are several patches of low, moist ground, which yields grass of the finest quality, and Guntoor, like Nellore, has been long celebrated for its fine short-horned cattle. In the Delta itself the pasture is superior, and whenever land is kept from the plough, the tumma tree (*acacia Arabica*) of spontaneous growth, quickly springs up, and supplies by its pods nourishing aliment for the cattle, while its gum and wood are in great request for various purposes Fallow land thus kept for pasture and tumma wood is currently looked upon among the natives as equally remunerative with land under crop, and under the zemindars was paid for on the same terms.

Delta.

11 The Delta itself may be seen on the map as lying between the high level channel, the Krishna and the sea. From the river bank on one side, and the Condaveed Hills on the other, the land falls towards the south east The Tungabhadra brook, which first shows itself not far from Mangalagerry, winds through the lowest level of the plain to Nizampatam, supplying a natural drain to the lands intersected by it; and between Chinnaganjam and Bapetta there is a basin, little if at all above the mean sea-level The inland streams, of which several cross the northern road between Guntoor and Incole, where that road enters the district from the south after filling the Delta tanks, empty themselves into this basin, converting it into a large lake till it is drained by evaporation. In the central Delta all the land may be said to be under occupation.

Production

12. The favourite crops here are great millet on the higher levels, and coarse or red paddy on the flats; and as a second crop, pulse of all varieties and oil-seeds, chiefly the dwarf castor-plant, ricinus But besides these staples, a variety of valuable products are grown in smaller quantities, as Indian corn, coriander, fencegreek, chillies, garlic, mustard, turmeric and tobacco. In the tract between the river and the Tungabhadra the water lies near the surface, and being raised by bullocks for garden cultivation, shows what can be effected by irrigation in the dry season. The yield of the land thus cultivated with betel, plantains, turmeric, ginger, yams, Indian corn, and raggy, is enormous.

Coast.

13. Lastly, a belt of sand, from three to 10 miles in breadth, separates the alluvial soil of the Delta from the sea, and confines the drainage of the plain to the two small outlets at Nizampatam and Chinnaganjam. In this section of the Delta, the water lies a few feet from the surface, and by its unfailing abundance more than compensates for the poverty of the soil. Near Nizampatam and Bapetta are extensive tracts covered with palmyras, and everywhere valuable crops of rice, raggy, cheyroot, or tobacco are cultivated in little patches of garden, watered by the hand from small ponds. Indeed this is among the most populous and least fluctuating parts of the district. It contains many large villages of weavers, and the proportion of the non-agricultural to the agricultural classes is greater on these talooks than in others, except Guntoor itself. The drawback unhappily is that the teeming population, chiefly of the lower

Productions.

For the relative value of land in each section, see Appendix, No

lower castes, shepherds, fishermen, toddydrawers and pariahs, are inveterately addicted to the use of toddy and arrack.

Exposure to floods.

14. From its conformation as now described, it has resulted that the Delta is peculiarly exposed to floods. Whether from the Krishna or the more southern streams, these inundations are of frequent occurrence in August or October, sweeping the whole flat country, and leaving the roads impassable for weeks.

Also to drought.

15. At the same time the country has been no less exposed to the opposite extreme, from the absence of irrigation. The whole district has contained less irrigated land than any other in the Presidency. The chief reservoirs in the Delta lie towards the coast. They are shallow, and the banks, formed of the loose alluvial soil, unprotected by stone, which has to be brought from a distance, are easily breached or melted away by the floods.

Uncertain crops.

16. But in addition to these causes, there is another less inherent. Until of late years the ryots have tenaciously clung to jorma, great millet, as their favourite crop. This plant is most uncertain. If healthy to the last, its yield is enormous, but it is so liable to blights of various kinds, and so easily injured by too much or too little rain, or by any rain at all when in blossom, that failures may be looked for in four seasons out of five. Indeed the climate, soil, and landed tenures, have concurred to encourage indolent and timid farming. Attention has only been directed to raising the almost spontaneous growth of the soil from year to year at the least cost or trouble.

Liability to famine.

17. Whether the causes explained be sufficient or not to account for the fact, certain it is that the famines which at times have visited all South India, except the western coast, have had their focus of severity in Guntoor.

Need of public works.

18. On the whole, it may be assumed that, notwithstanding the great advantage of its rich alluvial plain, none of our districts has stood more in need than Guntoor of the artificial appliances of reservoirs, channels, embankments, drainage and roads; yet none has been left so destitute of them.

Later history of Guntoor.

19. A cursory review of the later history of the province which has now to be given will partly account for this neglect of improvements.

The Circar and Palnad.

20. The Guntoor collectorate consists of the circar so called, and the district of Palnad, which was acquired in 1800, and has since been managed under ryotwar tenure.

Nature of Palnad ryotwary.

21. The term ryotwary, however familiarly it has of late been used, is still frequently misunderstood. It may be safe therefore to explain its essential characteristics as it prevails in the Palnad. The land has been classified, and rates of assessment fixed for each class; the fields measured and numbered. No distinctions of rate are recognised with reference to the crop grown, or the caste of the cultivator. Every ryot has the liberty of taking up or relinquishing any field he chooses at the proper season. He cannot be ousted of land so long as he pays for it, nor is any property recognised in land not occupied and paid for. Land that has been five or more years fallow, is allowed on reduced terms.

Farm tax on cattle.

Shepherds pay for their cattle at so much a head. All other farmers are exempt.

Zemindary estates.

22. The circar comprised several estates which came under British rule in 1778, but continued to be managed, as previously, by zemindars. In 1802, by the Permanent Settlement, they were consolidated into two large and three smaller zemindaries, as noted in the margin. These zemindars, though all calling themselves rajahs, were not the hereditary chiefs or rulers of the country, but descendants of local officers under the Mahomedan government, by whom they had been allowed to farm the revenues, while administering the affairs of the province.

Zemindaries.	Families	Peshcush.
1. Vassereddy -	Vassereddy	5,40,737
2. Malraz - -	Malraz -	3,38,792
3. Chilkalurpaud	Manoor -	1,26,700
4. Satanpully -	Ditto -	1,26,700
5. Reypilly -	Maniccarom	92,528

Origin of zemindary divisions.

23. It may be well here to explain that this allocation was made with no regard to territorial limits, or convenience of management. The Malraz family had acquired the Rachoor division of the Reypilly estates, and had parted with a portion of the Innaconda district to the Vassereddywar, while the latter had purchased the Colloor villages, and Nizampatam. The Manoor family had

obtained as official endowment the richest villages picked out of the Condaveed country, and these had been equally partitioned between two brothers forming the Chilkaloorpaud and Satanpully estates. Under this arrangement not only were villages of different estates intermingled, but many were split into halves belonging to different zemindars, and one village was actually shared by four different proprietors.

Powers of zemindars.

24. Practically, they exercised absolute power, with the exception of police and judicial functions. By the Permanent Settlement, the sum to be annually paid to Government was fixed in perpetuity, under the term of "Peishcush:" default of payment rendering the estates liable to sequestration, and eventually, if necessary, to sale.

Mode of settling with their ryots

25. The zemindars varied their terms with the ryots. On wet lands everywhere their rent was taken in kind, and on some dry lands also, where local circumstances made the produce uncertain. The most usual practice was a progressively increasing village lease for a term of three or five years. Balances were never cancelled, but were allowed in bad years to lie over. The great check against abuse of their power was the liberty of the ryot to move off with his stock to another zemindary; on the other hand, the policy of the zemindar was to keep a claim for arrears against him, and to threaten him, should he quit, with its legal enforcement.

Thirty years prosperity

26. For nearly 30 years after the settlement things went on smoothly. The first zemindars were men of ability and energy. The peishcush was punctually paid, and the Collector had little to do but look after the palnad, which continued to thrive. Mr. Oakes and Mr. Whish were each of them about 10 years in charge, and even after the death of the first zemindars no difficulty was found in managing their property when, under orders of the Court, it became necessary to do so.

Consequent inattention to works.

27. Under such circumstances it is no wonder that the importance of public works was lost sight of. The advantage of banking the Krishna was indeed forced upon Mr. Whish by a destructive inundation of that river, and he at once had a bank constructed from Bezwada nearly to the sea. He also paid some attention to roads, and the planting of groves and avenues.

Incipient decline.

28. In 1831, however, the elements of weakness began to appear; the Vassereddy family were engrossed in an endless litigation; the rental began to decline, and in 1832 came the failure of rain, followed by the famine of 1833, and the fever of 1834. The ravages of these fearful visitations are described at length, from authentic sources, in the Report of the Public Works Commissioners (Para. 289, &c.)

Results of famine

29. As the statistics given in the Appendix contain all the recorded information on the subject, the Commissioners' remarks need not be transcribed here. Suffice it to say, that they show the population to have diminished in two years by more than one half (2,56,000), of which they suppose 20,000 must have actually perished.

30. By an elaborate calculation, through which it is unnecessary here to follow them, they compute the whole loss, as far as it can be expressed in monetary value, at 2 crores and 27 lacs of rupees, or two and a quarter millions sterling.

Decrease of rents

31. With the aid of the rental of the district, which the Commissioners had not before them, the loss may be calculated by a simpler process.

	Rs
The average for the five years preceding the famine was	19,09,897
The average of the next 18 years - - - - -	12,38,873
Difference - - - - - - - - - - -	6,71,024
which, being multiplied by 18, gives - - -	1,20,78,432
Taking this as representing half the gross produce, the total loss of produce on the 18 years will be - -	2,41,56,864

Loss of produce indicated.

Other losses.

32. The Commissioners set down the loss to Government on other branches of revenue as 15 lacks and 37,000, and the value of agricultural live stock that perished as 18 lacks.

orks still neg-
cted.

33. After such a calamitous experience, it might have been expected that no measures within the compass of human skill, and our financial capabilities would have been spared to guard against its recurrence. Yet though the value of artificial irrigation, as a precaution against famine, had been demonstrated 40 years before, eight more passed away before attention was again directed to it.

om constant
hange of Col-
ctors.

34 So great indeed was the dread of the district after the reported horrors of which it had been the scene, that whoever was sent there seems to have made it his first care to get away. From the 21st July 1831, when Mr. Whish's management ceased, till 20th July 1837, when Mr. Goldingham's began, the district changed hands no less than 17 times. With such a transitory executive, any well-considered remedial measures must have been impossible.

nsolvent propri-
ors, management
f their estates.

35. The only important measure of this period, though conceived in a liberal and benevolent spirit, utterly failed of its object. The insolvent estates had, as a matter of course, been attached and placed under the Collector's management. On his recommendation, the zemindars, with the exception of the Malraz proprietrix, a widow, and the Reypilly zemindar, a minor, were replaced in charge as managing proprietors on behalf of Government, to account professedly for all the revenues after charging their establishments and their own maintenance

buse of their
ust.

36. The zemindars, however, losing sight of their reversionary interests, deemed it their policy to make the most of present opportunities. For private considerations they granted villages on favourable leases, and allowed partial and arbitrary reduction of rates. Division of the crop came to be the tenure of most of the best dry lands, as it had always been of the wet. They furnished imperfect or falsified accounts, and so greatly did they abuse their trust, that the Commissioner, Mr. W. Elliot, considered, from information collected by him in his inquiries in 1845, that they must have misappropriated about one-third of the revenues.

Universal corrup-
ion.

37 The universal corruption fostered under such a state of things, and the expertness acquired by the head ryots and revenue servants at combination and intrigues, to enrich themselves at the cost of Government, have ever since presented a formidable obstacle to the Collector's authority.

Gradual recovery
of revenues.

38 Notwithstanding these disadvantages, however, the district, from its inherent fertility and returning population, slowly yet steadily improved during this period.

Mr Goldingham's
management.

39. With Mr. Goldingham's appointment a new era commenced.

40. His attention was quickly turned to public works, and, with the aid of Captain Buckle, the Vellatoor channel was opened to admit the Krishna freshes to a line of tanks lying near the seaward limits of the Delta. Tanks were repaired, the Moonaugy Channel planned and commenced, the Emany Tank constructed. The Tungabhadra Channel planned, and an extensive improvement of the Madras Road, with several bridges, undertaken. Meantime he was actively engaged in revising the rates and measurements of the Malraz villages: lastly, and as opening the door for all the subsequent improvement, he fully exposed the vices of the zemindary management, pointed to the Palnad system as the only remedy, and suggested as the legitimate and safest mode of attaining this object, the sale of the estates for the arrears due to Government.

Sale of estates to
facilitate works.

41. And this recommendation was based not simply on the fiscal abuses inseparable from zemindary tenure, but also on the impracticability of any comprehensive scheme for irrigation, so long as the Delta lands were parcelled out among so many proprietors, whose conflicting claims and liabilities it seemed impossible to adjust. This consideration, as will afterwards be noticed, led Captain Buckle in 1839, while recalling attention to the annicut, to despair of its execution under existing circumstances.

1840–42, resump-
tion of two zemin-
daries.

42. The Malraz estate had, as noticed above, remained under the Collector's management. To this was added Chilkaloorpaud, on the death of the zemindar in 1810, and in the beginning of 1842 Mr. Goldingham was so satisfied of the malversation of Vassreddy Ramnatha Baboo, that he then resumed this estate also. The crops were abundant, and there was a prospect of a large increase

in the collections from the newly resumed estate, while the rest of the district was prospering and in good order.

Mr. Goldingham's removal, check to the district.

43. At this crisis the district was suddenly taken aback. Mr Goldingham was appointed to another charge, and during the short interregnum, and a few days before the arrival of the new Collector nearly all his establishment were removed. This change took place in the month of April, when the crops of the Vassereddy estate, on which the Government dues for the most part had to be taken in kind, were still in the field and unmeasured. At this time they had to be transferred from one set of temporary servants employed for the season to another. The Collector was fully occupied in trying the principal servants who had been suspended under charges of malversation, and his difficulties were greatly complicated by the extensive and well organised combination among the establishment to maintain their own position, secure their illicit spoils and prevent, as long as they could, the success of every measure which would facilitate justice, check corruption, or transfer power from their own hands to those where it ought to reside.

Effect of low prices

44. Upon these disadvantages supervened a depression of prices of grain extending through three years, 1842 to 1844, such as has never been on record in that province before or since

Court's orders

45. In the close of 1842, the decision of the Court of Directors was received upon Mr. Goldingham's recommendations. Instead of alienating the estates in perpetuity by selling them for arrears, they desired that the proprietors should be asked to surrender them on the understanding of receiving them back again when all requisite reforms had been introduced The zemindars evaded these orders in every possible way, and months had elapsed before they were all in the hands of the Collector So soon as this was effected, the necessity was felt of re-mapping the district in compact portions called talooks, each capable of management by a single tahsildar. The project was recommended to the Board, but was deferred. In May, 1843, occurred a disastrous hurricane, which swept away much of the harvest, and supplied the servants and ryots with a pretext for misappropriating much of what was left The management dragged heavily along, until, in 1844, the Collector's health broke down, and he had to proceed to sea. The decrease of the settlement the large balances, and the slow progress of the ordered reforms at this juncture, led to the appointment of a Member of the Board of Revenue to investigate the state of the district.

Estates to be surrendered

Note.—A subordinate with revenue and police power

Gale of May 1843

Mr Eliot's inquiry

46. The result of his inquiries was to charge the depression of the revenue chiefly upon the corruption of the establishment Nearly all the principal servants were dismissed, and the way was made plain for the introduction of the measures previously recommended by Mr Goldingham, which were now ordered to be vigorously carried out. It had been considered that a field-survey, conducted by a special establishment entertained for that purpose, was an indispensable preliminary in all such reform, consequently the Commissioner sketched out a plan for this operation and commenced work by way of a normal experiment But owing, as is supposed, to the great difference of opinion on the subject of surveys giving rise to discussions which have only now come to a close, no orders were passed to go on with it Meantime the Collector, acting on his own judgment, ventured to try what could be done with the means at his disposal How far he succeeded will be seen in the sequel

1845–46, sudden rise of revenue

47 The year 1845–46 was marked by one of the most sudden and striking augmentations of revenue recorded in any of our provinces The increase in the collections of land revenue alone amounted to four lacs of rupees upon 9,67,000 rupees, while the revenue from all sources collectively rose from 12,82,000 to 17,83,000, or one-third more. The causes of this startling improvement are thus explained in the Settlement Report for that year.

Collector's explanation

48. "It will thus be seen that in the year under review, all those influences which tended to produce the depression of the revenue in the three preceding years were simultaneously replaced by others of an exactly opposite tendency Instead of a combination for purposes of peculation under an unprincipled and unfit Head Serishtadar, there has been an active, able, and experienced servant,

Concurrence of heavy crops and scarcity prices.

trained in a good school at the head of the native establishment. Instead of ameens, whose hands were tied by corruption, several very efficient servants have been obtained unconnected with the district; and while the crops were unusually good, the ryots participated in the profits of scarcity prices." The consequence has been that the rise of the revenue was even more striking than its fall. "The increase," it was remarked, extended to every part of the district, comprehending both current and arrears. It would be as unreasonable to ascribe the increase entirely to alterations in the establishment or administration as it would be to limit to those causes the previous depression of the revenue; for though combinations of the kind which are found to have existed may succeed in concealing the true extent of cultivation and the true amount of collections, I do not see how they could tamper with the market. If our price currents are true, and there is as great disproportion between the prices of Fusly 1253 (1843–44) and 1255 (1845–46) as these indicate, to deny their corresponding influences on the revenue in both years, would seem to be alike contrary to reason and experience. As an instance of the fluctuations in the revenue, depending on prices, the account of three villages were adduced, for which *see* Appendix, No. 7.

Guntoor assimilated to Palnad.

49. From the beginning of 1846, the several changes necessary to assimilate the Guntoor Circar to the Palnad in its revenue practice were carried out, for the most part, in the following order:

Zemindaries purchased.

50. The five zemindaries were put up to auction, and bought in on account of Government.

Re-division of Guntoor.

51 The territorial division shown in the map, which included an exchange of villages with Nellore, as they lay within or without the boundary, and the transfer of the village of Kytapilly on the right bank of the Krishna, from Masulipatam to Guntoor, with a corresponding re-arrangement of the establishment, was sanctioned and took effect from the 1st September 1846.

Advantages thus secured.

52. Under this arrangement, the villages of the five zemindaries which had before, with great difficulty, been managed by 14 revenue officers (called ameens), some of them having to look after villages 80 miles apart, fell conveniently into 12 talooks, the central office in each being only an easy walk from most of the villages, and in scarcely any instance 20 miles from the remotest point.

Later collections.

53 The commencement of the collections in each year, in accordance with a previous recommendation, was fixed later, so as not to fall till the crops were available, and all restrictions on the crops, whether cut or standing, removed, unless where payments had still to be taken in kind, a practice which by the end of 1849, had ceased through the district.

Improved village accounts.

54. Village accounts of an improved form, substituting books for loose papers, and providing additional checks against exaction or misappropriation of the ryots' payments, with receipt books for the latter, were adopted in 1845, and brought into general operation.

Revision of Palnad assessment.

55. The revision of the Palnad field-measurements was completed, and the wet lands for the first time classed and brought under a field assessment. All fields were defined by boundary stones, and the registered number was proposed to have been cut on one stone for each field. In about a third of the Palnad this was done, and the whole might have been finished for the trifling cost of 400 rupees, but the suggestion was not approved by the Board, and the attempt was dropped.

Field registers.

56. Field registers were commenced, numbering each field consecutively in the order of its site. All lands under share, first the dry and then the irrigated of Guntoor, were brought under field assessment. With the abolition of the division of the crop, were for ever swept away hosts of petty extortioners, who, under the name of temporary establishment, entertained yearly to watch, appraise, measure, and sell the grain, had been in the habit of fattening on the ryots.

Adoption of acre standard.

57. The English acre was adopted as the recognised land measure in all public accounts for Guntoor, as it had long been for Palnad. In many villages, the assessment was revised and simplified, and the lands measured.

It must not be supposed that these measurements or registers lay claim to the merit of professional nicety, but they answered effectually the great end of preventing arbitrary alterations by the village accountants. Each ryot knows what he has to pay for his field, and that unless he encroaches the demand cannot be increased. Moreover, it may be assumed that the falsity where it exists, is in the ryot's favour.

58. Neither was any technical exactness attempted in the classification and rating of the land. It was chiefly done under the inspection of the tahsildars by the villagers themselves. The existing arrangements everywhere supplied a safe and satisfactory basis. The relative value of land has already practically found its level.

Lands rated by villagers themselves.

59. Distinctions of rate founded on the nature of the crop or on the caste of the cultivator, were abrogated, except the abatement of 25 per cent. on lands held by Brahmans,* and this was restricted within the narrowest possible limits and withheld on all land newly acquired. The coast villages of the Nizampatam circar were brought under an improved system. The village establishments were completed; and a scheme was drawn up for their remuneration. But it was only carried out so far as regards the village mohtauds or lowest grade of paid revenue servant.* Pains were taken to restore the heads of villages to their proper place, and use them for their proper duties.

Distinction varying with crop or caste, abolished.

60. These various measures except the Guntoor wet land assessment which was not completed till 1850, were prosecuted to completion in the course of the three years 1846, 1847 and 1848, with scarcely any extra establishment or additional cost. It is remarkable that though no special selection of agency had been made for the occasion, all seemed to be ready to the Collector's hands. The head assistant, Mr. Newill, was indefatigable not only in managing his own charge, but in relieving the Collector of all details connected with the public works, and other able and zealous young officers had each a full share of the current duties of revenue and police. The native servants were found able and ready for every part of the work to be done. Indeed without the assistance of the two Serishtadars, the reforms could not have been effected.

Reforms effected by ordinary establishment.

61. Side by side with reforms of management, the extension of public works had proceeded. For the first time, an officer of the line but qualified in surveying, was under the civil engineer of the division, Captain Lake, employed exclusively for Guntoor. No permission could be procured to do anything for the roads, but every tank, channel, or public building that stood in need of attention, received it.

Revived attention to works.

62. But in the close of 1848, a reaction began to appear. The harvest in the Delta and Krishna lands was a failure, and several of the tahsildars had apparently ceased to sweep like new brooms. Wistful reminiscences were indulged after the laxity of the sharing tenure, and both ryots and servants manifested a feeling of discontent.

Re-action in 1848.

63. In Mangalagery, Tenally and Reypilly, a determined combination not to pay, rendered it necessary to issue stringent orders for enforcing the collections. These orders were not carried out in good faith, and made to appear of no avail, except to harass the ryots by process of distraint, which were not carried out to the extent of sale of property.

Combination.

64. In 1849 and 1850, the Krishna again overflowed its banks, and a determined effort was made on the approach of the Commissioner to represent the management as oppressive and make a golden harvest of remission, and this was successful.

65. Still it is found that the Palnad and inland talooks continued steadily to advance, while the two nearest the coast did not retrograde. The depression indeed seemed limited to the villages exposed to floods in the centre of the district or skirts of the Delta.

Inland talooks advancing.

66. Additional and more detailed information as to the internal condition of Guntoor, and the working of the various modes in which it has been managed, will be found in the figured statements and notes given in the Appendix.

Appendix tables.

* *Note.*—This is called "Vuidra."

The exemption from tax on cattle enjoyed by farmers in the Palnad, was recommended for Guntoor more recently. It is under consideration.

67. Having

History of works.

67 Having brought down the revenue history of Guntoor to 1850, we may now enter on that of the works.

Krishna works projected in 1792.

68. The advantages and feasibility of a wear at Bezwada, were first brought before the Government of Madras by Major Beatson in December 1792, and 18th January 1793. After pointing out the benefits to the country of providing means for raising two crops of rice where only one was raised before, and for the production of several important articles such as sugar and indigo, he winds up by saying that the expense, whatever it be, must not be put in competition with the great advantages that would accrue from the accomplishment of such a work.

Advocacy of Mr. Topping's report in 1792.

69. The project was then submitted for examination to Mr. Topping, the Company's astronomer, who reported upon it in 1794. His view of its advantages seems to have in no wise fallen short of Major Beatson's.

Execution deferred

70. It does not appear what prevented Government from acting on such favourable recommendations. Most likely their attention and resources were fully occupied in the wars which intervened between that time and the permanent settlement, after which, as already shown, the difficulties in the way of execution were greatly increased, and the inducement at the same time diminished.

In 1839 again recommended by Captain Buckle,

And by the Board of Revenue, Department of Public Works

*By Captain Shaw.

71. In 1839, the undertaking was again brought forward by Captain Buckle, who, for many years had been civil engineer in the division and was well acquainted with Guntoor. He recommended it strongly as Major Beatson, on the ground of humanity, no less than of revenue, at the same time pointing out the impediments that existed under the zemindary tenure in the way of its success. His report was submitted to Government with the Board's opinion, dated 30th May 1840. By the Bezwada Annicut, they observed, Masulipatam (and they might have added Guntoor also) might, like Tanjore, be converted into a garden or granary for adjacent districts, but, from certain causes, they considered it at that time inpracticable In 1845, Captain Shaw took up the subject again, and in consequence of his report, Colonel, then Major Cotton, was requested to investigate it further and report the result to the Board From this time, until the estimate was finally sanctioned, the matter in all its bearings was under inquiry and discussion, both by the Revenue Authorities and the Public Works Department.

Colonel Cotton examines on the spot.

Captain Lake reports August 1847.

Guntoor 22,40,000. Masulipatam, 17,50,000.

72. Colonel Cotton met the two Collectors on the spot in November 1846, with Captain Lake, and the latter officer with his subordinates continued the investigation until he forwarded his report upon the work on the 9th August 1847. In this report, he estimated the cost of the annicut at four, and of subsidiary works for both districts, including a bridge over the annicut, at thirteen,—total, 17 lacs of rupees The annual increase of revenue was loosely estimated at 40 lacks of rupees He had calculated that the Delta contained on both sides of, the river about 1,000,000 acres which the annicut could command, and that most of this would eventually be watered But as regarded such revenue details, Captain Lake suggested that his report should be submitted for examination to the two Collectors, both of whom fully concurred with him as to the general advantages of the works.

73 This report with others, including voluminous statements from the revenue authorities, was referred by the Board, Department of Public Works, on the 7th August 1848, to Government,* who, in accordance with their recommendation, nominated a Committee to investigate the project on the spot, composed as follows :—

Captain E. Buckle, late Civil Engineer in the Division
Captain J. H. Bell, Secretary to the Board of Revenue D. P. W.
Captain C. A. Orr, Civil Engineer of the Division.
H. Stokes, Esq., Collector of Guntoor.
H. Forbes, Esq., Sub-Collector of Rajahmundry.

74. The

---

* Submitted to Government August 1848. Report from Collector, Masulipatam, 5th February 1848. Report from Collector, Guntoor, 4th November 1847. Civil Engineer, 1st division, 14th March 1848 Committee of Examination, December 1848.

Project recommended.

74. The Committee were engaged from the middle of December first at the Godavery, then on the Krishna project, till they sent in their report on the 26th January 1849. They had prolonged personal conferences with the other revenue officers, and the principal native servants of both districts. From the progress that had meantime been made in detailed field accounts, they had now access to more trustworthy data than had been afforded to Captain Lake. Their examination was directed to these three points, 1st. The probable returns,—2d. The selection of the site,—and 3d. The plan and cost of the work itself.

Estimate of returns reduced.

75. The estimate of returns appended to the Committee's report, shows for both sides of the river, an annual increase of revenue from irrigation, of seven lacks of rupees. How cautiously their calculations were framed will now be seen.

76. Keeping to round numbers and presenting the Committee's deductions in a simplified form, we find the estimate for Guntoor to stand thus.

	Rs.	*Rs*
The available area (Ayacut) classed as irrigated land in the talooks of Ponnoor, Bapetta and Reypilly, was returned as 36,000 acres * This at the medium rate per acre in that locality of six rupees, gives	2,16,000	
But the annual return under present sources of irrigation, cannot be taken at more than	80,000	
Difference, being profits expected, is		1,36,000
Again in the talooks of Tenally, Pooncor and Pretepaud, there are computed to be 76,000 acres of flat land commanded by the annicut, usually cropped with coarse paddy depending on the rains, assessed at	1,25,000	
This being irrigated and assessed accordingly, will bear at least three times this amount (less than five rupees an acre) or	3,75,000	
Difference or profit		2,50,000
Lastly, there is in Reypilly a computed area of waste land, capable under irrigation, of yielding a revenue of		79,000
	Rs	4,64,000 †

From this aggregate, they reserved 64,000 rupees as doubtful.

Now, as regards the two first items, no doubt can be started as to suitability of soil, nor as to the willingness of ryots, to avail themselves of water It is not a question of raising wet instead of dry crops, but of providing a full, instead of a partial, supply to lands where rice is already grown The last item is only uncertain as regards the extent of land that may be taken up, as the Reypilly ryots already use water for their crops wherever they can get it. All these items together, only contain about 1,25,000 acres, or a fourth of the area computed to be under the command of the new Guntoor channels.

Canal navigation not to be overlooked

77. In these estimates, no account is taken of the advantages of inland navigation, nor of the stimulus to industry and intelligence, which will assuredly be given by the works. These are benefits which cannot be expressed in money, yet it is scarcely too much to say that they would alone suffice to justify the undertaking

Bezwada decided on as the site.

78. Bezwada had been preferred as a site by Major Cotton and Captain Lake, but as the river is here confined by two hills to a channel of only 1,300 yards wide, with a velocity of four miles an hour, with nothing but sand for a foundation, its suitableness had been questioned The Committee decided however, in its favour.

79. In

---

* *Note* —This appears much in excess of the land actually laid out in beds as paddy fields, as subsequently returned in the Wet Land Assessment Report.

† So in original.

Increase of three lacks in estimates.

79. In the plan and estimates, the chief alteration made by the Committee, was to raise the crown of the wear four feet higher than proposed by Captain Lake. They also allowed for higher rates under some items, and in all raised the charge for the works on the river from a little more than four, to seven and a half lacks. With the details of subsidiary works, they did not occupy themselves.

Specification of wear.

80. As finally settled, the annicut occupies 2,990 feet of the river channel and the sluices and bridge-abutments the remaining 870 feet, which complete the width of the river. The height above summer-level being 16 feet, the width of the crest 12 feet, and that of the slope 48 feet.

Committee's report adopted

81. Government expressed their satisfaction with the Committee's report and adopted their recommendations. They allowed, however, eight instead of 13 lacks for the details of irrigation works, and calculating that this total of fifteen and half lacks would be distributed over seven years, recommended it for the sanction of the Government of India on the 20th July 1849, with an intimation that the execution would not be commenced, till the Godavery work had been completed, and stood the test of one year's freshes.

Sanction applied for July 1849.

Sanction announced 30th March 1851.

Preparation began in 1851.

Annicut began end of 1853.

82. But a further delay took place; by the Government of India the project was referred to the Home Government. Their sanction was given on the 5th January, and announced by the Government of Madras on the 30th March 1851. But from the want of executive officers, no preparations were made for another year. About the end of 1852, under the superintendence of Captain Orr, the sluices and locks were commenced, and finished by the middle of the year following. After the rains of 1853, the annicut was itself begun, and by the 25th of March last, it had spanned the river, being raised to the height of 10½ feet above the summer-level, or 15½ feet above the deep bed.

Channels, &c.

83. Meantime the outline of the other works had been planned. On the Guntoor side, the main channel being led round the Seetanagram hill by the head of the Tungabhadra for about four miles, branches out into three canals, all of which are to answer the double purpose of navigation and irrigation.

Three main channels.

84. The high level channel leads nearly due south towards Incole, and is intended to meet the coast canal from Madras. Another is carried along the river's bank, and a third takes the line to Nizampatam, which port it will thus connect with the river and the canals on its left bank.

Progress to end of September 1854.

85. The progress report of the undertaking to the end of September last, shows an expenditure as follows:

	Rs
On the river works comprising wear, sluices, and locks - - - - - - - - - -	5,88,398
On works beyond the river on both sides - -	2,08,440
Total expended - - -	7,96,838
To complete the wear, will probably take a further sum of - - - - - - - - - -	17,800
To complete other works, already sanctioned - -	46,000
Estimates now under submission - - - - -	3.73,000
All which are expected to be finished in two years; and about 10 lacks more may eventually be required. Thus, the total cost may be stated as, river works - - - - - - - -	7,66,000
Channel and river works already estimated for -	10,41,000
To be estimated - - - - - - - -	1,00,000
Rs.	28,07,000

7,96,838 expended.

Summary.

86. The result of the whole inquiry may be thus summed up:

That agriculture in Guntoor, with singular fertility of soil, has been specially obnoxious to damage, from either extreme of season; that being destitute of artificial protection, either from floods or from drought, and possessing less watered land than any other in this Presidency, this district has suffered the most in the famines. That so far from being rashly adopted, sixty years passed between the first projection and the commencement of the Krishna Works, for the last 10 of which they were under the diligent scrutiny of both engineers and revenue officers on the spot and at head quarters, and at last came before Government with the suffrages of every officer in each department, who had given an opinion about them, the strongest advocates being those of the longest local experience; that the revised estimates of returns were most cautiously framed, the only assumption being that the ryots who now irrigate their lands partially, will, when they can, be glad to do so fully, and that they will not hesitate to pay a mean rate of five or six rupees an acre That the Delta already contains 36,000 acres in different localities appropriated to the cultivation of fine, and 76,000 acres to that of coarse paddy, that the channels already dug have yielded ample profit, as shown in the margin, and the only irrigation works that failed, are a channel that never was finished, and a tank which, with two or three exceptions, was breached in every year that it was filled.

Sixty years passe after the project was mooted

Delta already irrigate where possible

Annual per centage o the prime cost, deduc ing repairs

Villatoor Channel, 88

Tungabhadra Channe 47[illegible]

Coochinapoody Channel, 197¼

87. The argument, that the prosperity of the revenue depends on the mode of collection, or the efficiency of the Collector, and that outlay on hydraulic works is supererogatory, is met by the simple fact that the first great element of the farmer's solvency, is produce, and the next, price, neither of which can be reached by the Collector's management strictly so called But whatever improvement is attainable by good management instead of being displaced, will rather be promoted by the works, and it is obvious on a moment's reflection, that whatever additional sum is paid to Government in consideration of the use of water, is to be set down as irrigation returns, altogether independent of the yield from lands not irrigated. Past experience does not warrant the hope that management alone, can carry forward the district in a course of prosperity, but should it do so, the progress of half a century would be swallowed up by one such reverse as these works are intended to guard against, while after all, the end of Government is not the creation of revenue, but the good of the people.

See return append to Public Works Commissioner's Report.

Management not sufficient

88. Incalculable benefit may reasonably be expected from the new operations, especially the inland navigation. If Government have been justified in public opinion, in laying out the sum they have done for the electric telegraph, merely to accelerate the transmission of intelligence, how much more in a work of this kind, which might, were it only once in a century, avert the horrors of famine.

89. It is indeed much safer not to look at the question simply as a money speculation. For cautious as have been the calculations in this instance, we must not forget the many unforeseen adversities that may arise. In particular, the difficulty of draining the Delta, and protecting the works and the lands from the tremendous inundations which occasionally occur, will demand all the talent, skill, attention and perseverance the engineer department can supply. Yet with the Divine Blessing, success need not be despaired of. After allowing for every contingency, and a large annual outlay for superintendence, new works, and wear and tear, there need be no fear that a large interest in actual revenue will be realised on the capital sunk.

Not a question of mere money.

90. This review of the whole question, however, will be incomplete, without one cautionary reflection. Unless measures of moral amelioration proceed simultaneously with the development of material resources, wealth and population may be multiplied indefinitely, and yet no substantial addition be made to the sum of human happiness. After all now proposed shall have been done, our Deltas may still be behind those of China in artificial advantages, and the people as miserable as the Chinese.

Moral improvement also required.

APPENDIX.

CONTAINING Statistical Tables of the *Guntoor* Collectorate, illustrating its Topography, and Annual Condition as respects Population, Revenue and Finance, for Thirty Years ending 11 July 1852.

THE Guntoor collectorate under zemindary tenure, was distinguished into the Guntoor circar, and the district of Palnad. When its boundaries were revised in 1856, one village with its dependencies was transferred to Nellore, seven were acquired from Nellore, one from Masulipatam, and one village forming part of the Venkatagerry zemindary in Nellore, was placed under the police and jurisdiction of Guntoor. This brought an accession to the population of about 15,000 souls, and to the revenue, of 16,000 rupees. Three villages which belonged to the zemindaries, but were situated within the Palnad, were annexed to the talook of Datchapally. The statements which follow have reference to this revised division of the district. To follow the old arrangement on this occasion, would be inconvenient, and is not necessary to the end in view.

The Guntoor collectorate then, as at present defined, is divided for revenue and police purposes into fourteen talooks, each under a tahsildar. These are sub-divided into circuits of villages called muttas, each under the supervision of an inferior revenue servant in that district termed samatdar. Many villages again have their dependencies or hamlets attached, but those only are called villages which have distinct village establishment of accountant, &c., and have from former times been entered as such in the accounts. Many of the so-called hamlets are larger and more important than some villages. For instance, Bapetta and Pratepad are classed as single villages, though round each there is a wide circle of large and rich subordinate villages. Under the zemindars eleven villages were partitioned into two, and one into four shares, and each share was numbered as a separate village in the accounts. This arrangement has now been rectified.

Of the villages some have been granted to individuals or bodies, rent free Others have been given, chiefly as Agraharams for the residence of Brahmins, or for other causes on a reduced quit rent. All others are called seri or Government villages.

The first three statements, No. 1 to 3, show the distribution of the land, population and stock, in a tabular form. Statement No. 1, shows only the whole agricultural area, and does not distinguish the alienated lands, nor include what is unfit for farming purposes.

In the printed review by the Commissioner for the Northern Circars of the settlement of the five districts for the year 1852-53, the following particulars are given of the area of Guntoor:—

	Acres.
Barren land, such as village-sites, hills, &c. - - - -	8,59,300
Fit for cultivation - - - - - - - - - -	17,76,895
Total Area - - -	26,36,195
The Agricultural area again is divided into:	
Dry - - - - - - - - - - - - - -	12,66,755
Garden - - - - - - - - - - - -	10,593
Wet - - - - - - - - - - - - - -	51,336
Total - - -	13,28,684
Alienated on rent-free tenure - - - - - -	1,71,867
On quit-rent tenure - - - - - - - -	2,76,344
Total - - -	4,48,211

This agricultural area differs from that given in Statement No. 1 by acres 36,351.* The area of barren land is of course only an approximation; only a small portion, if any, having been measured.

It is observable that the enams or alienated lands comprise one-fourth of the agricultural area. A large portion of them are held on invalid titles.

* 17,76,895
17,40,544
36,351

No. 1.—Distribution of Land, as Returned in 1851–52.

				VILLAGES.								UNDER OCCUPATION IN 1851–52											
												EXCLUSIVE OF EXEMPTED LANDS											
		Talooks.		Rent-free	Favourably Assessed		Fully Assessed		Total.		Agricultural Area	As Dry			As Garden.			As Wet			As Pasture		
			Mutahs	Villages	Villages	Hamlets	Villages	Hamlets	Villages	Hamlets		Land	Full Assessment	Mean Rate	Land	Full Assessment	Mean Rate	Land	Full Assessment	Mean Rate.	Land	Full Assessment.	Mean Rate.
1.		2.	3	4.	5	6	7	8	9	10	11.	12	13	14	15	16	17.	18	19	20	21.	22	23
											Acres	Acres	Rupees	Rs a p.	Acres	Rupees	Rs a p	Acres	Rupees	Rs a p	Acres	Rupees	Rs a p
Western Palnad - -	1	Tunmerecotah -	6	1	8	–	80	39	89	39	1,68,473	67,587	83,402	1 3 9	723	1,681	2 5 2	878	6,273	7 2 3	—	—	—
	2	Dutchapally -	4	–	9	–	57	14	66	14	1,43,215	44,057	62,739	1 6 9	193	721	3 12 6	1,063	8,044	7 9 –	—	—	—
Guntoor - -	3	Innacondah -	6	5	21	5	83	61	109	66	1,89,287	37,647	35,958	– 15 3	1,902	6,388	3 5 8	515	3,151	6 1 10	86,730	16,374	– 3 –
	4	Narsarowpet -	8	1	18	-	80	53	99	55	1,86,681	43,030	63,185	1 7 5	348	1,081	3 1 8	1,108	7,278	6 9 1	83,027	18,068	– 3 5
	5	Curapad - -	8	1	20	–	122	19	143	19	1,75,670	59,032	94,386	1 9 6	179	675	3 12 4	315	3,112	9 14 –	80,782	18,404	– 3 7
Central - - -	6	Martur - -	7	–	14	2	55	68	69	70	1,53,934	54,986	1,01,178	1 13 5	486	1,714	3 8 5	402	2,373	5 14 5	40,573	8,570	– 3 4
	7	Conduveed -	6	–	4	1	42	21	46	25	70,484	34,244	62,369	1 13 2	4	24	6 – –	342	2,341	6 13 6	28,215	6,400	– 3 7
	8	Guntoor - -	7	–	4	–	57	37	61	37	1,09,737	46,921	78,709	1 10 10	505	4,080	8 1 3	419	2,720	6 – 11	36,249	7,414	– 3 3
	9	Mangalagirry -	9	1	5	–	66	19	72	19	1,10,494	37,387	89,282	2 6 2	673	4,923	7 5 –	548	3,989	7 4 5	52,853	13,857	– 4 2
Upper Delta - -	10	Prattipad - -	9	–	5	1	42	34	47	35	97,970	62,687	1,50,331	2 6 4	48	255	5 5 –	415	695	1 10 9	17,650	8,175	– 7 5
	11	Ponnur - -	10	–	10	1	58	63	68	64	1,01,154	50,025	91,182	1 13 2	779	5,139	6 9 6	5,443	29,274	5 6 –	19,226	5,913	– 4 11
	12	Tenally - -	9	–	12	1	46	36	58	37	92,616	60,987	1,04,212	1 11 4	1,814	11,087	6 1 9	14	44	3 2 3	10,010	2,304	– 3 8
Coast Delta - -	13	Repalli - -	10	–	8	13	69	218	77	231	76,568	43,697	73,468	1 11 3	913	6,055	6 10 1	4,052	20,846	5 2 3	4,212	1,006	– 3 9
	14	Bapetta - -	8	–	1	–	22	108	23	108	64,254	22,694	43,524	1 14 8	1,246	20,906	16 12 5	6,402	37,477	5 13 7	12,202	5,588	– 7 4
		Total - -	107	9	139	24	879	795	1,027	819	17,40,544	6,61,390	11,33,931	1 11 3	9,820	64,740	6 9 5	21,951	1,27,623	5 13 –	4,71,729	1,12,073	– 3 9

Note.—1. Columns 2, 4 to 10, are taken from the Settlement Return of the year

2. Columns 12, 13, 15, 16, 18, 19, ditto, but being intended to show the relative rating of the land, and not the actual revenue of the year, deductions for various causes are not shown.

3. Columns 21, 22, and 23 are taken from a statement sent to the Commissioner N. C., dated 24th May 1858

4. The area shown is only an approximation, and does not profess to include the barren land. In the Palnad all wet lands, and the dry lands of some villages, have been measured in acres, but of other land the old recorded native measures have been converted into acres

No. 2.—POPULATION as Returned in 1850-51.

	HINDUS.									OTHERS.									GRAND TOTAL.	
			ADULTS.		CHILDREN.		TOTAL.					ADULTS.		CHILDREN.		TOTAL.				
TALOOKS.	Houses.	Families.	Males.	Females.	Males	Females	Males	Females.	TOTAL.	Houses.	Families.	Males.	Females.	Males.	Females.	Males	Females.	TOTAL.	Agricultural.	Non-Agricultural.
1	8,613	10,730	13,139	13,617	8,678	8,120	21,817	21,737	43,554	645	781	992	1,026	709	634	1,701	1,600	3,361	35,085	11,830
2	6,426	7,768	9,436	10,106	6,289	5,643	15,725	15,749	31,474	512	599	731	771	579	514	1,310	1,285	2,595	26,251	7,818
3	6,983	8,788	11,906	11,618	7,764	7,123	19,670	18,741	38,411	349	413	540	517	419	376	959	893	1,852	26,998	13,265
4	6,644	8,220	10,569	10,613	6,827	6,340	17,396	16,953	34,349	597	702	901	885	691	621	1,592	1,506	3,098	25,365	12,082
5	7,599	9,362	11,411	11,556	7,401	6,585	18,812	18,141	36,953	561	655	823	804	578	510	1,401	1,314	2,715	24,182	15,486
6	8,068	10,114	13,652	13,445	8,060	7,443	21,712	20,888	42,600	569	722	927	919	621	591	1,548	1,510	3,058	29,622	16,036
7	3,458	4,166	5,560	5,658	3 285	3,078	8,845	8,736	17,581	627	733	928	976	652	593	1,580	1,569	3,149	11,913	8,817
8	7,947	9,770	12,279	12,582	7,341	6,511	19,620	19,093	38,713	1,003	1,238	1,561	1,616	1,032	921	2,593	2,537	5,130	20,268	23,575
9	7,870	9,540	12,187	12,224	7,347	6,430	19,534	18,654	38,188	339	405	531	532	354	301	885	833	1,718	20,476	19,430
10	6,271	7,680	10,213	10,370	6,371	5,851	16,584	16,221	32,805	305	355	462	460	360	266	822	726	1,548	20,095	13,358
11	6,453	8,210	11,080	10,735	6,952	6,506	18,032	17,241	35.273	308	375	513	482	338	309	851	791	1,642	25,490	11,425
12	7,486	9,620	12,888	12,563	7,799	7,206	20,687	19,760	40,456	194	242	303	307	207	201	510	508	1,018	29,123	12,351
13	9,422	12,011	15,921	15,257	10,065	8,617	25,986	23.874	49,860	440	508	660	631	523	410	1,183	1,041	2,224	34,518	17,566
14	11,396	13,829	18,220	17,717	9,714	8,774	27,934	26,491	54,425	459	525	706	660	468	384	1,174	1,044	2,218	28,460	28,183
	1,04,636	1,29,808	1,68,461	1,68,061	1,03,893	94,227	2,72,354	2,62,288	5,34,642	6,908	8,253	10,578	10,586	7,531	6,631	18,109	17,217	35,326	3,58,746	2,11,222

No. 3.

TALOOKS	Agricultural Area	Population	Agricultural Stock as returned in 1851-52.				Proportion per 100 Acres of Area		Proportion of Non-agricultural Population to the whole.	TALOOKS.
			Sheep and Goats	Oxen and He-Buffaloes.	Cows and She-Buffaloes.	TOTAL	Persons	Stock.		
1	1,68,473	46,915	48,666	14,896	51,330	1,14,892	28	68	25	Timmercotah.
2	1,43,215	34,069	49,851	11,044	36,126	97,021	24	68	23	Datchapelly
3	1,89,287	40,263	92,404	8,835	43,432	1,44,671	21	76	33	Innacondah
4	1,86,681	37,447	59,100	8,667	38,236	1,06,003	20	56	32	Narsarowpet.
5	1,75,670	39,668	53,226	9,682	49,102	1,12,010	22	64	39	Curapad
6	1,53,934	45,658	84,650	9,956	38,602	83,208	29	54	34	Martur
7	70,484	20,730	14,431	4,273	19,361	38,065	29	54	42	Condaveed.
8	1,09,737	43,843	30,127	7,347	31,229	68,703	40	63	54	Guntoor
9	1,10,494	39,006	13,553	8,180	31,402	53,135	36	48	49	Mangalagury
10	97,970	34,353	16,167	7,251	30,119	53,537	35	55	39	Prattipad
11	1,01,154	36,915	12,478	11,012	31,084	54,574	36	54	31	Ponnur
12	92,616	41,471	9,146	9,981	27,743	46,870	45	51	40	Tenaly.
13	7,65,638	52,084	34,984	12,395	30,716	78,095	68	102	34	Repalli
14	64,254	56,043	38,268	10,110	33,825	82,203	88	128	50	Bapetta.
	17,40,544	5,69,968	5,07,051	1,33,629	4,92,307	11,32,987	33	65	37	

The next statement, No 4, shows the annual rental, omitting fractions, of the whole district for 30 years. By rental is meant the aggregate sum demandable from each village on account of land revenue, as annually settled. It is also known by the names of demand, or settlement, and by the native revenue terms of dowl, beriz or jummah, &c., it is composed of quit-rent on favourably assessed villages, the same on enam lands, assessment on dry, garden, and wet lands occupied during the year, rent of fruit trees and pasture lands, under which last head is included the rent of wild chaya-root. Under village rents these various items were not brought separately to account. Until the accounts for Guntoor ceased to be kept as for a permanently settled district, the peishcush, or permanent demand on the zemindaries, was alone shown in the collector's account of the rental for the zemindary villages, unless they happened to be under sequestration. The account now shown was obtained by collecting the annual settlement accounts from the talook or village records and arranging them. In a few instances, the accounts of a village for some one year were missing, and the gap has been supplied by taking the memo. of the previous and following years in the series. It is however sufficiently accurate for the object intended

In some districts, the term rental or beriz is applied, not to the land in occupation in any single year, but to the aggregate amount of the rent on all lands that have at any time been brought to account. No such account exists for Guntoor.

Prior to the year 1846, the particulars of the several descriptions of land-rent comprised in the rental, were not separately recorded. From that year the sum charged, though not the land, under each head is shown in Table No. 5.

The same Table shows the annual collections and balance remaining for those years.

Statement No. 6, shows the result of the assessment and measurement of the wet lands, so far as they have been laid out.

No 4.—Rental of each Talook for 30 years, ending 11th July 1851-2.

Numbers.	Year.	WESTERN.					CENTRAL.				UPPER DELTA.			COAST DELTA.		Grand Total
		Palnad.		Innacondah	Nursarowpet.	Curapad.	Mutur.	Condaveed.	Guntoor.	Mungalagirry	Prattipad.	Ponnur.	Tenally	Repalli.	Bapetta.	
		Timmerecotah.	Datchapally													
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.
		Rs.	Rs	Rs.	Rs.	Rs.	Rs.	Rs.	Rs	Rs.	Rs.	Rs.	Rs.	Rs	Rs.	Rs.
1	1822-3	1,20,638	1,18,228	81,358	1,21,555	1,81,905	1,41,098	1,06,933	1,39,378	1,97,390	1,91,969	1,46,405	1,04,520	1,09,886	1,48,516	19,09,779
2	1823-4	1,12,976	1,05,410	77,839	1,21,505	2,00,214	1,42,321	1,08,112	1,40,479	1,99,369	1,93,897	1,23,086	1,21,702	1,07,343	1,43,213	18,97,466
3	1824-5	1,17,475	1,06,174	86,932	1,45,992	2,31,715	1,66,171	1,13,713	1,49,963	2,14,617	1,98,719	1,22,795	1,37.294	1,06,622	1,31,603	20,29,771
4	1825-6	1,21,946	1,12,997	90,381	1,40,708	2,19,993	1,74,102	1,10,677	1,51,019	2,19 543	2,04,393	1,60,866	1,33,478	1,27,803	1,50,715	21,18,621
5	1826-7	1,22,908	1,14,577	91,137	1,38,031	2,10,983	1,74,187	1,13,460	1,50,314	2,26,387	2,09,961	1,49,184	1,34,852	1,30,151	1,56,316	21,22,448
6	1827-8	1,15,424	1,14,056	75,420	1,29,722	2,04,307	1,67,843	1,15,537	1,40,686	2,28,040	2,05,127	1,39,306	1,27,076	1,13,420	1,34,273	20,10,237
7	1828-9	1,18,302	1,15,231	83,837	1,30,340	1,72,299	1,67,533	1,15,261	1,36,870	2,06,653	2,08,186	1,32,351	99,483	1,06,376	1,24,891	19,17,613
8	1829-30	1,10,497	99,581	80,053	1,19,276	1,70,260	1,63,645	1,12,493	1,38,200	2,12,337	2,06,718	1,34,182	1,09,404	1,01,960	1,35,333	18,93,939
9	1830-31	1,10,533	1,02,212	89,743	1,26,637	1,53,765	1,57,733	1,10,986	1,37,204	2,01,822	2,05,639	1,56,106	1,17,208	1,14,547	1,61,944	19,46,079
10	1831-2	1,06,818	88,206	86,953	1,18,044	1,20,993	1,53,773	1,06,150	1,32,195	1,88.193	1,96,029	1,27,141	1,21,113	1,00,371	1,35,637	17,81,616
11	1832-3	1,07,237	87,533	84,145	1,01,326	1,03,047	1,45,823	90,686	1,12,072	1,50,292	1,77,241	1,19,567	96,318	99,454	1,02,568	15,77,309
12	1833-4	85,574	67,699	52,536	55,500	77,594	1,21,932	76,437	1,00,921	1,34.800	1,61,450	1,10,884	95,124	88,046	1,02,866	13,31,363
13	1834-5	89,287	70,837	42,532	45,992	56,291	1,09,534	60,278	81,392	1,16,568	1,33,493	90,138	65,760	83,762	99,410	11,45,274
14	1835-6	88,624	68,252	34,034	34,731	43,753	93,820	45,776	67,858	1,00,435	1,04,533	76,795	77,128	82,308	82,329	10,01,276
15	1836-7	91,207	66,941	35,752	35,409	45,235	74,855	42,029	63,896	93,556	95,508	64,003	94,412	82,548	83,409	9,68,760
16	1837-8	1,01,725	82,085	41,963	43,300	51,602	84,411	44,626	64,498	91,062	1,02,032	67,236	66,010	72,566	88,283	10,01,399
17	1838-9	1,00,750	78,642	42,520	47,226	53,998	93,485	44,826	67,246	1,06,773	1,09,925	73,778	1,52,683	84.858	93,666	11,50,376
18	1839-40	1,07,242	85,631	55,334	63,382	64,675	1,07,372	51,907	74,076	1,15,265	1,22,277	98,778	90,018	90,926	1,25,023	12,51,906
19	1840-41	99,476	74,396	53,224	63,742	67,702	1,10,889	55,419	71,032	1,10,967	1,27,641	91,765	94,146	80,453	91,897	11,92,749
20	1841-2	99,131	71,228	56,110	66,895	66,914	1,12,136	57,078	79,121	1,06,956	1,31,679	85,238	75,890	85,273	1,09,520	12,04,069
21	1842-3	90,300	64,467	40,992	61,458	66,211	1,04,263	56,606	76,530	93,757	1,30,418	78,341	90,007	78,416	92,138	11,29,904
22	1843-4	84,161	66,258	49,973	60,423	65,711	98,222	56,735	74,270	90,912	1,31,845	74,813	64,120	76,786	82,299	10,76,528
23	1844-5	78,633	65,465	50,072	58,310	67,879	96,944	48,412	69,828	95,441	1,15,526	80,590	78,258	82,468	85,920	10,73,746
24	1845-6	90,447	77,650	58,625	68,828	77,307	1,05,035	54,802	79,124	1,29,674	1,17,595	99,940	1,25,769	90,501	1,11,257	12,86,554
25	1846-7	1,02,215	83,859	56,867	78,553	96,685	1,11,929	64,948	86,733	1,44,612	1,33,101	1,20,634	1,06,235	1,05,680	1,37,643	14,29,694
26	1847-8	1,03,794	87,310	57,809	79,045	1,11,628	1,13,475	68,451	93,480	1,54,414	1,45,790	1,21,078	1,24,022	89,929	1,01,246	14,52,371
27	1848-9	1,06,248	88,175	59,309	83,427	1,28,062	1,14,935	71,418	97,993	1,48,570	1,55,642	1,24,755	1,29,650	1,05,682	1,01,447	15,15,313
28	1849-50	1,10,477	92,631	63,488	91,779	1,28,810	1,14,869	72,998	97,035	1,28,262	1,62,252	1,16,501	1,29,996	92,707	1,09,793	15,11,118
29	1850-51	1,11,360	93,876	63,167	94,056	1,21,249	1,14,424	73,039	80,189	87,446	1,35,536	1,12,522	1,10,106	87,311	1,16,254	14,00,535
30	1851-2	1,14,296	92,423	63,125	91,305	1,15,732	1,10,661	71,555	92,292	1,07,087	1,46,129	1,30,099	1,11,963	97,492	1,11,574	14,55,733
Quinquennial Average.	First -	1,19,188	1,11,477	85,529	1,33,558	2,08,962	1,59,573	1,10,579	1,46,231	2,11,461	1,99,788	1,40,467	1,26,369	1,16,361	1,46,072	20,15,615
	Second	1,12,315	1,03,857	83,201	1,24,804	1,64,325	1,62,105	1,12,085	1,37,031	2,07,409	2,04,340	1,37,617	1,14,857	1,07 335	1,38,416	19,09,897
	Third -	92,386	72,252	49,080	54,592	65,184	1,09,193	63,041	65,228	1,19,130	1,34,445	92,277	85,748	87,224	94,116	12,04,796
	Fourth -	1,01,665	78,397	49.830	56,909	60,978	1,01,658	50,951	71,196	1,06,204	1,18,711	83,359	95,749	82,815	1,01,678	11,60,100
	Fifth -	89,151	71,540	52,506	65,514	74,759	1,03,279	56,301	77,297	1,10,879	1,25,697	90,863	92,878	86,770	1,01,851	11,99,285
	Sixth -	1,09,235	90,887	61,380	87,922	1,20,096	1,13,673	71,492	92,198	1,25,156	1,49,070	1,21,171	1,21,147	94,624	1,08,063	14,67,014

No 5.—PARTICULARS of the RENTAL for Seven Years, ending 11 July 1852.

YEAR	Dry and Garden Land	Wet Land.	Quit Rent on partially assessed Fields.	Quit Rent on partially assessed Villages.	Grass Rents.	Fruit Trees	TOTAL.	COLLECTIONS.			Balance of each Year at its close.
								Current.	Arrears	TOTAL	
	Rs	Rs.	Rs	Rs	Rs.	Rs	Rs	Rs	Rs.	Rs.	Rs
1845-46	10,21,668	1,10,214	65,320	18,096	58,779	3,001	12,77,081	11,66,403	1,99,627	13,66,031	1,10,678
1846-47	10,99,644	1,41,100	68,099	18,096	85,361	6,459	14,18,761	13,25,751	1,03,056	14,28,807	93,010
1847-48	11,44,130	99,179	74,414	18,359	1,11,420	8,440	14,55,944	13,79,080	86,209	14,65,289	76,864
1848-49	12,01,767	94,268	75,246	18,359	1,22,104	6,706	15,18,462	14,41,821	47,932	14 89,753	76,641
1849-50	11,91,819	98.871	74,680	18,359	1,23,334	6,329	15,13,395	13,82,876	28,235	14,11,111	1,30,519
1850-51	10,43,615	1,34,911	74,623	18,359	1,22,926	8,622	14,03,058	12,83,541	17,496	13,01,037	1,19,517
1851-52	11,08,872	1,29,071	72,026	18,359	1,23,453	6,186	14,57,969	13,60,612	44,690	14,05,303	97,357

No 6.—IRRIGATED RICE LANDS in the *Guntoor* District, actually laid out and Assessed

TALOOKS	Villages	Area	Assessment	Rate per Acre.			SETTLEMENT						
				Average	Highest	Lowest	1845-6	1846-7	1847-8	1848-9	1849-50	1850-1	1851-2
1.	2.	3.	4	5.	6	7.	8.	9.	10	11	12	13	14
1	29	1,150	8,375	7 4 5	18 14 6	3 2 –	2,302	2,342	2,312	1,620	3,369	4,629	6,273
2	27	1,842	15,038	8 2 7	16 8 –	4 – –	9,723	6,181	6,171	4,898	9,082	10,502	8,011
3	34	1,233	9,402	7 10 –	12 – –	3 – –	7,141	2,765	532	1,486	4,408	4,975	3,191
4	34	1,366	12,373	9 – 10	16 – –	3 10 –	9,495	10,746	1,592	2,663	8,828	10,036	7,278
5	18	958	9,920	10 5 6	15 – –	7 – –	3,352	3,072	3,296	3,008	4,511	4,738	3,112
6	12	697	5,262	7 8 8	11 – –	5 – –	6,966	4,032	3,005	1,704	3,320	3,741	2,373
7	9	478	3,476	7 4 4	13 – –	3 4 –	1,197	3,384	1,039	726	2,239	2,632	2,331
8	14	389	2,520	6 7 5	9 – –	4 – –	2,347	825	1,575	575	2,407	2,643	2,747
9	7	622	4,431	7 1 10	10 – –	4 4 –	1,226	458	4,490	830	2,969	2,711	4,020
10	5	478	2,796	5 13 6	9 10 –	2 14 –	1,547	1,851	792	17	2,175	2,487	695
11	16	7,464	46,927	6 4 7	9 – –	3 – –	24,085	37,412	26,120	21,195	11,841	19,573	30,159
12	1	385	1,542	4 – –	4 – –	4 – –	200	1,307	220	598	27	20	44
13	40	8,045	43,831	5 7 2	8 – –	1 12 –	4,776	19,948	10,997	23,253	5,661	21,749	21,180
14	17	10,692	66,955	6 4 2	14 – –	4 – –	35,852	46,770	37,029	31,688	35,022	44,408	37,657
TOTAL	263	35,807	2,32,848	6 8 –	– – –	– – –	1,10,214	1,41,100	99,179	94,268	95,864	1,34,911	1,29,071

For Palnad, *See* to Board of Revenue 25th April 1848
For Guntoor, *See* to Commissioner, 13th March 1851.

The next statement, No. 7, will serve the threefold purpose of showing the effect of the famine, the influence of prices on the land revenue, and the operation of our management. It shows for each year the population, prices, rental, collection, and charges of every branch of revenue, and the total sum annually withdrawn, chiefly in specie, from the district in the shape of net revenue.

In this statement the following points chiefly deserve attention:—

1. The results of the famine These having been enlarged on in paragraphs 29-33 of the Memo. need not be further noticed here.

2. The decline in the prices of grain; the average per garce in the first period having been 166 millet 155 paddy, and in the last 115 millet, paddy 99. The ratio of the assessment to the gross produce varies annually with the range of the market price during the season of collection of wet and dry produce respectively. Thus the ratio in any given year is expressedly a fraction, of which the denominator is the selling price of, say, a garce of grain, and the numerator, the assessment of the land, on which that quantity has been raised.

*It is currently supposed by the ryots that an acre of dry land may yield five tooms, or one-sixteenth of a garce, nearly. Taking then the mean rate of dry land for the whole district per acre at rupee 1-11. This × 16=27 the sum payable per garce of produce, which is seen to have ranged from $\frac{27}{199}$ or $13\frac{5}{8}$ per cent. in 1823 to $\frac{2}{46}$ or $58\frac{5}{8}$ per cent. in 1844. By a similar calculation and assuming the medium produce of an acre of wet land to be one-fourth of a garce and the mean rate of assessment to be 6-8 rupees, the assessment on wet land has ranged from $\frac{26}{192}$ to $\frac{26}{81}$ or from $13\frac{1}{2}$ to $32\frac{1}{16}$ per cent. of the gross produce

3. The next point is the large difference between the present and maximum rental.

4. Another, and a very important, point is the exhausting tendency of our present system, unless counteracted by public improvements. The difference between the land rental, plus the gross collections from all other sources, and the net revenue as shown in column 91, represents, it may be assumed, the maximum that can have been spent in the district. In the first ten years it stands thus:—

Rental land - - - - - - - - -	196,27,569
Gross collections from extra sources - - - -	49,13,655
Total . - - -	245,41,224
Deduct net revenue - - - - - - -	160,61,810
Difference retained in the district - - - -	84,79,414

In the last ten Years it is thus:—

Rental land - - - - - - - - -	133,31,496
Gross collections from extra sources - - -	45,67,219
Total - - -	178,98,715
Deduct net revenue - - - - - - - -	126.54,639
Difference retained in the district - - - -	52,44,076

The effect of this silent but steady drain must necessarily be the impoverishment of agriculture.

5. The small expenditure on roads is the fourth point. During 30 years it has amounted to 1,16,171 rupees.

6. The expenditure on tanks and watercourses by the zemindars for their villages, no where appears. The amount disbursed by Government is included in column 60, under charges of management. But in column 6 of the statement of expenditure on irrigation appended to the Report of the Commissioners on public works, it is given as 275,522 rupees during 30 years, of which 210,261 rupees has been since the middle of 1846.

7. The sum expended on public instruction, 1,316 rupees, during 30 years, suggests many regrets that the education despatch was not issued half a century ago.

No. 7.—REVENUE and FINANCE TRANSACTIONS of Thirty Years ending 11th July 1852.

Number	YEAR	Population.	Price per Garce		Land Rental	LAND REVENUE								Net Revenue	Per Cent
						COLLECTIONS					CHARGES				
			Millet.	Paddy.		Current.	Arrears.	TOTAL.	Extra Revenue.	TOTAL.	Management.	Allowances to Zemindars, Pagodas, &c	TOTAL		
	1	2	3	4	5	6	7	8	9.	10	11	12.	13	14	15.
1	1822-23	- -	199	154	19,09,779	11,36,801	2,49,029	13,85,830	44,567	14,30,397	79,452	9,874	89,326	13,41,071	6 3 11
2	1823-24	- -	187	165	18,97,466	13,01,555	3,14,508	16,16,063	16,635	16,32,698	89,330	10,263	99,593	15,33,105	5 15 8
3	1824-25	- -	182	178	20,29,771	14,09,943	1,33,190	15,43,133	11,713	15,54,846	84,533	9,445	93,978	14,60,868	6 – 8
4	1825-26	- -	151	175	21,18,621	13,91,746	26,939	14,18,685	10,580	14,29,265	84,337	6,461	90,798	13,38,467	6 5 8
5	1826-27	4,76,787	112	103	2 ,22,448	14,12,606	55,311	14,67,917	13,277	14,81,194	1,16,410	6,635	1,23 045	13,58,149	8 4 10
6	1827-28	4,78,259	97	92	20,10,237	14,36,038	36,836	14,72,874	29,341	15,02,215	1,11,819	6,501	1,18,320	13,83,895	7 14 –
7	1828-29	4,78,053	124	101	19,17,613	14,07,430	4,207	14,11,637	14,479	14,26,116	96,616	6,650	1,03,266	13,22,850	7 3 10
8	1829-30	4,78,608	129	122	18,93,939	14,20,121	34,007	14,54,128	11,973	14,66,101	86,091	6,261	92,352	13,73,749	6 4 8
9	1830-31	5,09 365	122	111	19,46,079	13,03,091	5,628	13,08,719	15,309	13,24,028	98,501	6,171	1,04,672	12,19,356	7 14 6
10	1831-32	5,12,317	111	89	17,81,616	11,29,036	1,20,696	12,49,732	13,923	12,63,655	83,941	6,063	90,004	11,73,651	7 2 –
11	1832-33	3,57,038	192	192	15,77,309	5,92,824	65,676	6,58,500	4,114	6,62,614	75,008	5,852	80,860	5,81,754	12 3 3
12	1833-34	2,55,511	195	242	13,31,363	6,59,371	3,15,261	9,74,632	59,718	10,34,350	1,36,893	7,515	1,44,408	8,89,942	13 15 4
13	1834-35	2,24,413	151	123	11,45,274	4,93,037	18,556	5,11,593	30,387	5,41,980	82,175	6,095	88,270	4,53,710	16 4 3
14	1835-36	2,34,667	97	97	10,01,276	7,17,938	1,66,474	8,84,412	11,357	8,95,769	81,375	5,919	87,294	8,08,475	9 11 11
15	1836-37	2,54,902	100	115	9,68,760	7,17,476	65,146	7,82,622	11,540	7,94,162	93,155	5,848	99,003	6,95,159	12 7 6
16	1837-38	2,67,426	98	109	10,01,399	7,21,719	63,477	7,85,196	10,869	7,96,065	99,822	5,829	1,05,651	6,90,414	13 4 4
17	1838-39	3,02,155	167	167	11,50,376	7,82,339	66,629	8,48,968	8,510	8,57,478	1,05,684	5,798	1,11,482	7,45,996	12 15 10
18	1839-40	3,08,860	119	126	12,51,906	8,68,552	68,095	9,36,647	8,225	9,44,872	99,523	5,801	1,05,324	8,39,548	11 2 4
19	1840-41	3,15,306	101	104	11,92,749	9,13,794	85,343	9,99,137	15,814	10,14,951	1,04,977	5,812	1,10,789	9,04,162	10 14 8
20	1841-42	3,18,888	77	90	12,04,069	8 77,762	27,418	9,05,180	10,533	9,15,713	97,443	5,813	1,03,256	8,12,457	11 4 5
21	1842-43	3,44,729	59	79	11,29,904	8,08,352	36,529	8,44,881	11,632	8,56,513	97,276	5,329	1,02,605	7,53,908	11 15 8
22	1843-44	3,66,164	46	81	10,76,528	6,34,487	53,345	6,87,832	14,757	7,02,589	95,712	5,592	1,01,304	6,01,285	14 6 8
23	1844-45	3,78,310	69	87	10,73,746	7,64,202	78,370	8,42,572	15,757	8,58,329	93,360	5,587	98,947	7,59,382	11 8 5
24	1845-46	3,82,819	135	115	12,86,554	10,61,679	2,22,524	12,84,203	38,417	13,22,620	1,43,781	16,683	1,60,464	11,62,156	12 2 1
25	1846-47	4,11,619	125	116	14,29,694	13,25,781	1,06,263	14,32,044	14,678	14,46,722	1,54,068	52,405	2,06,473	12,40,249	14 4 4
26	1847-48	4 83,831	123	104	14,52,371	13,79,080	96,824	14,75,904	12,562	14,88,466	2,29,817	55 590	2,85,407	12,03,059	19 2 9
27	1848-49	4,87,172	104	99	15,15,313	14,41,821	56,820	14,98,641	10,820	15,09,461.	2,01,651	45,144	2,46,795	12,62,666	16 5 7
28	1849-50	4,87,172	97	92	15,11,118	13,82,877	2,07,520	15,90,397	14,771	16,05,168	1,98,593	61,700	2,60,293	13,44,875	16 – 6
29	1850-51	5,70,083	126	112	14,00,535	12,83,541	17,496	13,01,037	16,858	13,17,895	2,14,001	61,846	2,75,847	10,42,048	20 14 10
30	1851-52	5,70,083	123	92	14,55,733	13,60,612	44,691	14,05,303	19,333	14,24,636	2,05,782	53,054	2,58,836	11,65,800	18 2 9
TOTAL - - -		1,02,54,627	3,718	3,632	4,47,83,546	3,21,35,611	28,42,808	3,49,78,419	5,22,449	3,55,00,868	35,41,026	4,97,636	43,38,662	3,14,62,206	—
Average - -		3,94,408	124	121	14,92,785	10,71,187	94,760	11,65,947	17,415	11,83,362	1,18,034	16,588	1,34,622	10,48,740	—
Quinquennial Average.	First -	- -	166	155	20,15,615	13,30,530	1,55,795	14,86,325	9,354	15,05,680	90,812	8,536	99,348	14,06,332	6 9 6
	Second -	4,84,214	117	103	19,09,897	13,39,143	40 275	13,79,418	17,005	13,96,423	95,394	6,329	1,01,723	12,94,700	7 4 6
	Third -	3,16,789	147	154	12,04,796	6,36,129	1,26 222	7,62 351	23,424	7,85,775	93,721	6,246	99,967	6,85,808	12 11 9
	Fourth -	2,89,748	112	119	11,60,100	8,32,833	62 192	8,95,025	10,791	9,05,816	1,01,490	5,810	1,07,300	7,98,515	11 13 6
	Fifth -	3,58,182	87	96	11,99,285	9,18,900	99 406	10,18,306	19,048	10,37,354	1,16,839	17 119	1,33,958	9,03,396	12 14 7
	Sixth -	4,87,975	115	99	11,67,014	13,69,586	84,671	14,54,257	14,868	14,69,125	2 09,969	55,466	2,65,435	12,03,690	15 1 –

No. 7 —REVENUE and FINANCE Transactions of Thirty Years ending 11th July 1852—*continued*.

Number	YEAR	SALT.						LAND CUSTOMS.						SEA CUSTOMS.					
		Collections.	Extra Revenue.	TOTAL	Charges, Management, and Manufacturer's Share	Net Revenue	Per Cent.	Collection	Extra Revenue	TOTAL	Charges.	Net Revenue.	Per Cent.	Collection.	Extra Revenue.	TOTAL	Charges	Net Revenue	Per Cent
		16	17	18	19.	20	21	22	23	24	25.	26	27.	28.	29	30	31	32	33.
1	1822-23	2,32,451	1,888	2,34 339	44,451	1,89,888	18 15 6	1,11,718	676	1,12,394	39,416	72,978	- -	1,674	72	1,746	804	942	46 - 8
2	1823-24	2,16,208	3,121	2,19,329	46,329	1,73,000	21 2 3	90,782	1,706	92,488	40,435	52,053	- -	1,482	59	1,541	1,250	290	81 1 11
3	1824-25	2,05,800	8,775	2,14,575	41,797	1,72,778	19 11 10	80,801	4,471	85,272	10,960	74,312	12 13 7	3,183	59	3,242	672	2,570	20 11 7
4	1825-26	2,45,309	4,127	2,49,436	44,006	2,05,430	17 10 4	91,453	1,483	92,936	29,080	63,856	31 4 8	5,070	335	5,405	713	4,692	13 3 -
5	1826-27	2,46,269	4,852	2,51,121	80,160	1,70 961	31 14 1	96,641	1,462	98,103	29,325	68,778	29 14 3	4,409	280	4,689	709	3,980	15 1 10
6	1827-28	2,39,447	4.705	2,44,152	64,627	1,79,525	26 7 6	1,11,394	4,972	1,16,366	38,498	77,868	33 1 4	5,898	264	6,162	675	5,487	10 15 3
7	1828-29	2,62,057	2,607	2,64,664	33,060	2,31,604	12 7 11	1,05,636	551	1,06,187	27,659	78,528	26 - 9	6,603	53	6,656	660	5,996	10 1 1
8	1829-30	4,28,166	5,951	4,34,117	61,808	3,72,309	14 3 9	1,05,511	210	1,05,721	25,204	80,517	23 13 5	5,859	71	5,930	597	5,333	10 1 2
9	1830-31	3,14,706	2,059	3,16,765	40,143	2,76,622	12 10 9	96,861	231	97,092	24,722	72,370	25 7 4	2,387	63	2,450	571	1,879	23 4 10
10	1831-32	3,85,213	4,838	3,90,051	54,975	3,35,076	14 1 6	92,586	201	92,787	24,383	68,404	26 4 6	1,958	65	2,023	532	1,491	26 4 10
11	1832-33	1,59,885	4 430	1,64,315	51,498	1,12,817	31 5 6	64,555	180	64,735	24,181	40,554	37 5 7	3,142	135	3,277	540	2,737	16 7 8
12	1833-34	2,98,138	2,857	3,00,995	34,446	2,66,549	11 7 1	45,707	150	45,857	23,437	22,420	51 1 9	2,001	17	2,018	1,466	552	72 10 4
13	1834 35	2,29,243	4,798	2,34,041	34,284	1,99,757	14 10 7	48,756	240	48,996	21,992	27,004	44 14 2	3,328	18	3,346	557	2,789	16 10 4
14	1835 36	2,49,229	2,593	2,51,822	29,858	2,21,964	11 13 8	59,848	244	60,092	20,115	39,977	33 7 6	4,050	42	4,092	564	3,528	13 12 6
15	1836-37	2,38,243	2,017	2,40,260	21,918	2,18,342	9 1 11	60,699	27	60,726	18,569	42,157	30 8 6	2,233	138	2,371	518	1,853	21 13 7
16	1837-38	2,92,487	141	2,92,628	35,107	2,57,431	12 - 5	59,283	127	59,410	15,366	44,044	25 13 9	3,015	13	3,028	504	2,524	16 10 4
17	1838-39	3,38,781	2,716	3,41,497	33,741	3,07,756	9 14 1	59,142	291	59,433	14,322	45,111	24 1 6	2,468	295	2,763	506	2,257	18 5 -
18	1839-40	3,53,955	1,963	3,55,918	45,934	3,09,984	12 14 6	62,382	54	62,436	14,001	48,435	22 6 9	2,778	290	3,068	507	2,561	16 8 6
19	1840-41	2,91,940	1,659	2,93,599	43,746	2,49,853	14 14 5	64,385	79	64,464	13,620	50,844	21 2 1	2,458	320	2,778	504	2,274	18 2 6
20	1841-42	3,03,621	598	3,04,219	34,239	2,69,980	11 4 1	56,331	19	56,350	13,529	42,821	24 - 1	2,978	50	3,028	523	2,505	17 4 4
21	1842-43	2,76,886	2,075	2,78,961	52,985	2,25,976	18 15 11	57,406	25	57,431	13,598	43,833	23 10 10	3,591	32	3,623	504	3,119	13 14 6
22	1843-44	3,46,178	1,915	3,48,093	21,375	3,26,718	6 2 3	43,422	140	43,562	10,305	33,257	23 9 2	4,970	176	5,146	505	4,641	9 13 -
23	1844-45	3,55,330	1,283	3,56,613	52,580	3,04,033	14 11 10	10,986	57	11,043	868	10,175	7 13 10	7,275	22	7,297	503	6,794	6 14 4
24	1845-46	3,45,133	2,808	3,47,941	27,330	3,20,611	7 13 8	5,958	248	6,206	1,961	4,245	31 9 6	7,622	172	7,794	642	7,152	8 3 9
25	1846-47	3,10,754	5	3,10,759	36,025	2,74,734	11 10 -	4,769	9	4,778	1,913	2,865	40 - 6	4,194	193	4,387	502	3,885	11 7 -
26	1847-48	3,87,023	2,305	3,89,328	39,089	3,50,239	10 - 7	3,924	86	4,010	1,981	2,029	49 6 6	4,021	94	4,115	503	3,612	12 3 8
27	1848-49	4,06,736	580	4,07,316	31,871	3,75,445	7 13 2	3,005	37	3,042	2,008	1,034	66 - 4	7,421	18	7,439	514	6,925	6 14 6
28	1849-50	3,84,656	5,124	3,89,780	56,168	3,33,612	14 6 6	3,439	- -	3,439	1,991	1,448	57 9 3	755	81	836	517	319	61 18 10
29	1850-51	4,12,919	1,803	4,14,722	25,903	3,88,819	6 3 11	3,746	88	3,834	2,051	1,783	53 8 -	1,924	11	1,935	421	1,514	21 12 -
30	1851-52	3,33,787	2,684	3,36,471	45,157	2,91,314	13 6 9	2,932	8	2,940	2,020	920	68 11 3	2,069	-	2,069	348	1,721	16 18 4
TOTAL - - -		90,90,550	87,277	91,77,827	12,64,700	79,13,127	- -	17,04,058	18,072	17,22,130	5,07,510	12,14,620	- -	1,10,816	3,438	1,14,254	18,331	95,923	—
Average - -		3,03,018	2,909	3,05,927	42,156	2 63,771	- -	56,802	623	57,404	16,917	40,487	- -	3,694	118	3,808	611	3,197	—
Quinquennial Average.	First -	2,29,207	4,553	2,33,760	51,349	1,82,411	21 15 5	94,270	1,906	96,239	29,843	66,396	31 - 1	3,164	161	3,325	830	2,495	24 15 4
	Second -	3,25,918	4,032	3,29,950	50,923	2,79,027	15 6 11	1,02,398	1,233	1,03,631	28,093	75,538	27 1 8	4,541	103	4,644	607	4,037	13 1 1
	Third -	2,34,948	3,339	2,38,287	34,401	2,03,886	14 6 11	55,913	168	56,081	21,659	34,422	38 9 11	2 951	70	3,021	729	2,292	24 2 1
	Fourth -	3,16,157	1,415	3,17,572	38,571	2,79 001	12 2 3	60,305	114	60,419	14,168	46,251	13 7 2	2,739	194	2,933	509	2,424	17 5 8
	Fifth -	3,26,856	1,617	3,28,473	38,059	2,90,414	11 9 4	24,508	96	24,604	5,729	18,875	23 4 6	5,530	119	5,649	531	5,118	9 6 4
	Sixth -	3,85,034	2,499	3,87,528	39,637	3,47,886	10 3 4	3,409	44	3,453	2,010	1,443	58 3 4	3,238	41	3,279	461	2,818	14 - 11

No 7 —Revenue and Finance Transactions of Thirty Years ending 11th July 1852—continued

Number	YEAR	ARRACK AND TODDY FARM								MOTURPHA							
		COLLECTIONS					Charges	Net Revenue	◆ Per Cent	COLLECTIONS					Charges	Net Revenue	Per Cent
		Current	Arrears	Total	Extra Revenue	Total				Current.	Arrears	Total	Extra Revenue	Total			
		34	35	36	37	38.	39	40	41	42	43.	44	45	46	47	48	49
1	1822-23	25'115	725	25,840	584	26,424	684	25,740	2 9 5	36,532	15,633	52,165	94	52,259	4,904	47,355	9 6 1
2	1823-24	25'305	1,822	27,127	314	27,441	793	26,648	2 14 2	55,618	- -	55,618	151	55,769	4,883	50,856	8 12 1
3	1824 25	25'039	2,123	27,162	373	27,535	695	26,840	2 8 4	41,395	17,060	58,455	303	58,758	4,996	53,762	8 8 -
4	1825-26	27'185	2,578	29,763	921	30,684	670	30,014	2 2 11	54,966	13,909	68,905	351	69,256	4,973	64,283	7 2 11
5	1826 27	28,353	673	29,026	472	29,498	1,709	27,789	5 12 8	61,320	5,739	67,059	1,102	68,161	5,408	62,753	7 14 11
6	1827-28	28,272	166	28,438	928	29,366	578	28,788	1 15 5	61,132	824	61,956	3,880	65,836	5,846	59,990	8 14 1
7	1828-29	29,091	706	29,797	1,464	31,261	600	30,661	1 14 8	61,242	748	61,990	446	62,436	4,422	58,014	7 1 4
8	1829-30	28,730	213	28,943	710	29,653	577	29,076	1 15 1	60,987	725	61,712	59	61,771	4,247	57,524	6 14 -
9	1830-31	27,929	239	28,168	433	28,601	581	28,020	2 - 6	60,768	1,698	62,466	75	62,541	4,210	58,331	6 11 8
10	1831-32	28,028	984	29,012	547	29,559	560	28,999	1 14 3	60,526	2,183	62,709	319	63,028	4,161	58,867	6 9 7
11	1832-33	21 684	213	21,897	392	22,289	519	21,770	2 5 3	39,900	991	40,891	81	40,972	3,814	37,158	9 4 11
12	1833-34	12 587	506	13,093	199	13,292	468	12,824	3 8 4	22,069	1,152	23,221	14	23,235	3,536	19,699	15 8 6
13	1834-35	14,389	3,245	17,634	291	17,925	498	17,427	2 12 5	24,361	1,480	25,841	17	25,858	15,701	10,157	60 12 1
14	1835-36	16,284	3,617	19,901	292	20,193	454	19,739	2 8 11	29,936	2,374	32,310	57	32,367	15,685	16,682	48 7 4
15	1836-37	17,880	3,368	21,248	263	21,511	363	21,148	1 11 -	34,990	4,097	39,087	40	39,127	3,374	35,753	8 10 -
16	1837-38	18,831	3,000	21,831	1,069	22,900	327	22,573	1 6 10	40,663	10,422	51,085	4	51,089	3,342	47,747	6 9 2
17	1838-39	21,018	3,144	24,162	360	24,528	339	24,189	1 6 1	44,413	7,451	51,863	66	51,929	3,362	48,567	6 7 7
18	1839-40	21,715	646	22,361	296	22,657	337	22,320	1 7 9	34,092	3,632	37,724	-	37,724	3,326	34,398	8 13 1
19	1840-41	21,943	903	22,846	184	23,030	341	22,689	1 7 8	31,785	10,317	42,102	40	42,142	3,322	38,820	7 14 1
20	1841-42	22,917	681	23,598	140	23,738	348	23,390	1 7 5	34,026	7,291	41,317	- -	41,317	3,250	38,067	7 13 10
21	1842-43	23,463	504	23,967	178	24,145	338	23,807	1 6 4	31,360	4,893	36,253	16	36,269	3,073	33,196	8 7 6
22	1843-44	21,417	802	22,219	768	22,987	330	22,657	1 6 11	33,989	3,833	37,822	- -	37,822	3,088	34,734	8 2 8
23	1844-45	24,493	2,508	27,001	196	27,197	315	26,882	1 2 6	33,054	1,095	34,149	- -	34,149	3,109	31,040	9 1 8
24	1845-46	25,562	290	25,852	449	26,301	370	25,931	1 6 6	36,657	5,555	42,212	1,583	43,795	3,078	40,717	7 - 6
25	1846-47	26,284	2,450	28,734	469	29,203	157	29,046	- 8 7	41,173	5,226	46,399	28	46,427	1,900	44,527	4 1 6
26	1847-48	28,710	196	28,906	653	29,559	- -	29,559	- -	45,567	1,872	47,439	11	47,450	306	47,144	- 10 4
27	1848-49	33,535	347	33,882	578	34,460	- -	34,460	- -	46,980	1,412	48,392	455	48,847	335	48,512	- 10 11
28	1849-50	33,606	100	33,706	789	34,495	1	34,494	- -	47,653	839	48,492	26	48,518	322	48,196	- 10 7
29	1850-51	33,353	29	33,382	1,436	34,818	49	34,769	- 2 3	45,358	611	45,969	33	46,002	317	45,685	- 11 -
30	1851-52	29,847	288	30,135	1,122	31,257	- -	31,257	- -	46,374	1,437	47,811	17	47,828	320	47,508	- 8 10
Total - - -		7,42,565	37,066	7,79,631	16,876	7,96,507	13,001	7,83,506	- -	12,98,915	1,34,499	14,33,414	9,268	14,42,682	1,22 610	13,20,072	—
Average - -		24,752	1,235	2,598	562	26,550	481	26,117	- -	43,297	4,638	47,780	356	48,089	4,087	44,002	—
Quinquennial Average	First - -	26,199	1,584	27,783	533	28,316	910	27,406	3 8 5	49,072	10,468	60,440	400	60,840	5,033	55,807	8 4 4
	Second -	28,410	462	28,872	817	29,688	579	29,109	1 15 2	60,931	1,236	62,167	956	63,123	4,577	58,546	7 4 -
	Third -	16,565	2,189	18,755	288	19,042	460	18,582	2 6 7	30,251	2,019	32,270	42	32,312	8 422	23,890	26 1 -
	Fourth -	21,285	1,675	22,959	411	23,370	338	23,032	1 7 1	36,996	7,822	44,818	22	44,840	3 320	41.520	7 6 5
	Fifth -	24,244	1,311	25,555	412	25,967	302	25,665	1 2 7	35,247	4,120	39,367	325	39,692	2,850	36,842	7 2 10
	Sixth -	31,810	192	32,002	916	32,918	10	32,908	- - 5	46,386	1,234	47,620	109	47,729	320	47,409	- 10 8

◆ *Note* —This includes the two heads of Abkarry, and sundry small items in the district accounts

(*continued*)

A A 2

No. 7.—REVENUE and FINANCE Transactions of Thirty Years ending 11th July 1852—*continued.*

Number.	YEAR.	STAMPS							GRAND TOTAL.							
									COLLECTIONS.			CHARGES.				
		Collection 50	Extra Revenue 51	TOTAL. 52	Charges. 53.	Net Revenue. 54	Per Cent. 55.	Items not connected with any particular sources of Revenue. 56.	Current and Arrears 57.	Extra Revenue. 58	TOTAL. 59	Management 60	Allowances to Zemindars, Pagodas, &c. 61.	TOTAL. 62	Net Revenue. 63	Per Cent. 64.
1	1822-23	14,614	- -	14,614	1,475	13,139	10 1 7	- -	18,24,292	47,881	18,72,173	1,71,186	9,874	1,81,060	16,91,113	8 9 8
2	1823-24	14,406	- -	14 406	1,440	12,966	9 15 11	57	20,21,686	22,043	20,43,729	1,84,460	10,263	1,94,723	18,49,006	9 8 5
3	1824-25	13,597	4	13,601	1,360	12,241	10 – –	- -	19,32,131	25,698	19,57,829	1,45,013	9,445	1,54,458	18,03,371	7 14 3
4	1825-26	16,462	12	16,474	1,646	14,828	9 15 11	62	18,75,647	17,871	18,93,518	1,65,425	6,461	1,71,886	17,21,632	9 1 4
5	1826-27	16,756	2	16,758	1,597	15,161	9 8 5	211	19,28,077	21,658	19,49,735	2,35,318	6,635	2,41,953	17,07,782	12 6 7
6	1827-28	14,748	117	14,865	1,664	13,201	11 3 1	81	19,34 755	44,288	19,79,043	2,23,707	6,501	2,30,208	17,48,835	11 10 1
7	1828-29	15,202	42	15,244	1,531	13,713	10 – 8	1,036	18,92,922	20,678	19,13,600	1,64,548	6,650	1,71,198	17,42,402	8 15 1
8	1829-30	14,770	3	14,773	1,504	13,269	10 2 10	1,104	20,99,089	20,081	21,19,170	1,80,028	6,261	1,86,289	19,32,881	8 12 6
9	1830-31	13,090	3	13,093	1,211	11,882	9 4 –	219	18,26,397	18,422	18,44,819	1,69,939	6,171	1,76,110	16,68,709	9 8 9
10	1831-32	12,169	82	12,251	2,330	9,921	19 – 10	559	18,33,379	20,534	18,53,913	1,70,882	6,063	1,76,945	16,76,068	9 8 9
11	1832-33	8,019	145	8,164	854	7,310	10 7 4	1,988	9,56,889	11,465	9,68,354	1,56,414	5,852	1,62,266	8,06,088	16 12 1
12	1833-34	6,265	- -	6,265	612	5,653	9 12 4	289	13,63,056	63,244	14,26,300	2,00,858	7,515	2,08,373	12,17,927	14 9 8
13	1834 35	6,438	- -	6,438	597	5,841	9 4 4	381	8,42,833	36,132	8,78,965	1,55,804	6,095	1,61,899	7,17,066	18 6 9
14	1835-36	7,340	45	7,385	729	6,656	9 14 –	105	12,57,090	14,735	12,71,825	1,48,780	5,919	1,54,699	11,17,126	12 2 10
15	1836-37	7,753	108	7,861	366	7,495	4 10 6	222	11,51,885	14,355	11,66,240	1,38,263	5,848	1,44,111	10,22,129	12 5 8
16	1837-38	8,283	1	8,284	393	7,891	4 12 –	50	12,21,180	12,274	12,33,454	1,54,951	5,829	1,60,780	10,72,674	13 – 7
17	1838-39	7,815	17	7,832	538	7,294	6 13 11	242	13,33,199	12,503	13,45,702	1,58,492	5,798	1,64,290	11,81,412	12 3 6
18	1839-40	8,421	9	8,430	428	8,002	5 1 3	112	14,24,268	10,949	14,35,217	1,64,056	5,801	1,69,857	12,65,360	11 13 4
19	1840-41	14,398	- -	14,398	714	13,684	4 15 4	40	14,37,266	18,145	14,55,411	1,67,224	5,812	1,73,036	12,82,375	11 14 3
20	1841-42	7,024	- -	7,024	393	6,631	5 9 6	742	13,40,049	12,082	13,52,131	1,49,725	5,813	1,55,538	11,96,593	11 8 1
21	1842-43	6,675	3	6,678	368	6,310	5 8 2	31	12,49,659	13,992	12,63,651	1,68,142	5,329	1,73,471	10,90,180	13 11 8
22	1843-44	7,032	- -	7,032	1,676	5,356	23 13 3	115	11,49,475	17,871	11,67,346	1,32,991	5,592	1,38,583	10,28,763	11 13 10
23	1844-45	5,296	399	5,695	411	5,284	7 3 4	200	12,82,609	17,914	13,00,523	1,51,146	5,587	1,56,733	11,43,790	12 – 8
24	1845-46	3,236	1,329	4,565	217	4,348	4 11 10	430	17,14,216	45,436	17,59,652	1,77,379	16,683	1,94,062	15,65,590	11 – 6
25	1846-47	4,652	546	5,198	377	4,821	7 4 -	1,444	18,31,546	17,372	18,48,918	1,94,942	52,405	2,47,347	16,01,571	13 6 –
26	1847-48	3,415	287	3 702	237	3,465	6 6 6	947	19,50,632	16,945	19,67,577	2,71,933	55,590	3,27,523	16,40,054	16 10 4
27	1848-49	8,740	812	9,552	701	8,851	7 5 5	416	20,06,817	13,716	20,20,533	2,37,080	45,144	2,82,224	17,38,309	13 15 6
28	1849-50	7,860	1,204	9,064	792	8,272	8 11 10	539	20,69,305	22,534	20,91,839	2,58,384	61,700	3,20,084	17,71,755	15 4 10
29	1850-51	8,479	523	9,002	802	8,200	8 14 7	459	18,07,456	21,211	18,28,667	2,43,544	61,846	3,05,390	15,23,277	16 11 1
30	1851-52	9,719	573	10,292	993	9,299	9 10 4	129	18,31,756	23,866	18,55,622	2,54,620	53,054	3,07,674	15,47,948	16 9 4
TOTAL - - -		2,92,674	6,266	2,98,940	27,956	2,70,984	- -	12,249	4,83,89,561	6,75,895	4,90,65,456	54,95.234	4,97,536	59,92,770	430,72,686	—
Average - -		9,756	272	9,964	932	90,337	- -	437	16,12,985	22,529	1,35,515	1,83,174	16,584	1,99,759	14,35,756	—
Quinquennial Average.	First - -	15,167	4	15,171	1,504	13,667	9 14 7	66	19,16,365	27,031	19,43,396	1,80.281	8,536	1,88,817	17,54,580	9 11 5
	Second -	13,996	49	14,045	1,648	12,397	11 11 8	606	19,17,308	24,801	19,42,109	1,81,821	6,329	1,88,130	17,53,959	9 11 –
	Third -	7,163	60	7,223	632	6,591	8 11 11	597	11,14,350	27,986	11,42,336	1,60,024	6,246	1,66,270	9,76,066	14 8 10
	Fourth -	9,188	5	9,193	493	8,703	5 5 9	239	13,51,192	13,191	13,64,383	1,58,890	5,810	1,64,700	11,99,683	12 1 1
	Fifth -	5,378	455	5,833	610	5,223	10 7 3	444	14,45,501	22,517	14,68,018	1,64,920	17,119	1,82,039	12,85,979	12 6 4
	Sixth -	7,642	680	8,322	705	716	8 7 6	498	19,33,193	19,654	19,52,847	2,53,112	55,467	3,08,579	16,44,268	15 12 9

No 7 —REVENUE and FINANCE Transactions of Thirty Years ending 11th July 1852—*continued.*

Number.	YEAR.	OTHER ITEMS.														
		JUDICIAL.							CHARGES							
		Receipts			Charges.											
		Institution Fees 65	Fines 66	TOTAL 67.	Judicial 68	Police 69	TOTAL. 70	Sundry Items received. 71.	Post Establishment. 72.	Office Rent. 73	Pensions. 74	Civil Hospitals, and Vaccine Establishment. 75	Charges: Merchandize on Treasure. 76	Ordinary General Miscellaneous Charges. 77	Allowances to unemployed Civil Servants 78	Public Roads, and Repairs of Roads. 79
1	1822-23	- -	2,985	2,983	- -	47,004	47,004	2,371	4,178	1,014	4,829	1,344	1,574	—	—	—
2	1823-24	- -	2,338	2,338	- -	44,607	44,607	2,796	4,832	725	3,667	1,344	942	—	—	—
3	1824-25	- -	2,554	2,554	- -	45,123	45,123	.197	3,708	420	2,701	1,344	913	—	—	—
4	1825-26	- -	3,323	3,323	- -	45,693	45,693	1,409	3,377	711	2,313	1,344	869	—	—	—
5	1826-27	- -	3,474	3,474	- -	52,185	52,185	1,884	- -	225	2,376	1,344	888	—	—	—
6	1827-28	- -	- -	- -	- -	69,522	69,522	3,453	3,856	613	3,255	1,344	947	—	—	—
7	1828-29	904	2,645	3,549	59,036	51,591	1,10,527	3,546	3,420	5,121	4,486	1,344	804	—	—	—
8	1829-30	700	2,234	2,940	59,150	50,617	1,09,767	2,713	3,390	744	5,499	1,344	943	—	—	—
9	1830-31	648	2,346	2,994	45,684	50,130	95,814	2,202	3,504	739	4,854	1,291	785	—	—	—
10	1831-32	1,416	1,249	2,665	34,323	51,746	86,069	1,731	2,978	730	4,595	1,052	819	—	—	—
11	1832-33	847	688	1,535	78,727	62,029	1,30,756	2,858	2,336	408	4,569	1,538	364	—	—	—
12	1833-34	1,455	720	2,175	96,381	57,262	1,53,643	3,759	2,362	420	3,792	1,068	410	- -	- -	63,341
13	1834-35	1,138	597	1,735	61,238	51,373	1,12,611	4,377	2,100	420	2,917	937	302	—	—	—
14	1835-36	1,592	646	2,238	46,836	50,393	97,229	2,460	1,977	601	2,644	799	382	- -	- -	20
15	1836-37	3,585	830	4,415	50,103	52,958	1,03,061	3,059	1,081	445	2,219	546	373	- -	2,586	1,070
16	1837-38	2,849	571	3,420	49,009	54,997	1,04,006	5,155	2,121	759	2,511	546	504	- -	- -	436
17	1838-39	1,924	749	2,673	51,956	60,772	1,12,728	5,073	9,040	700	2,649	546	764	- -	- -	593
18	1839-40	4,431	1,006	5,437	57,829	58,720	1,16,549	3,984	3,553	840	2,682	546	572	- -	- -	473
19	1840-41	1,978	652	2,630	46,177	60,506	1,06,683	3,676	5,247	676	2,672	570	580	- -	474	1,085
20	1841-42	2,034	814	2,848	44,296	60,208	1,04,504	3,631	4,975	759	2,565	554	641	- -	- -	1,672
21	1842-43	2,652	1,835	4,487	45,855	57,365	1,03,220	3,619	4,707	911	2,315	546	421	430	- -	21,655
22	1843-44	2,215	1,835	4,050	66,662	56,567	1,23,229	3,409	3,438	925	2,323	546	443	2,482	- -	1,015
23	1844-45	2,341	1,543	3,884	68,978	56,644	1,25,622	3,066	3,408	931	1,952	546	433	2,537	1,625	1,674
24	1845-46	3,839	3,619	7,458	72,398	50,621	1,23,019	3,286	4,664	456	1,891	546	511	2,364	- -	609
25	1846-47	5,927	3,410	9,337	66,504	49,186	1,15,690	3,699	5,252	635	2,185	640	561	2,736	- -	747
26	1847-48	3,797	3,078	6,875	57,679	47,738	1,05,417	3,646	5,234	975	2,191	742	447	2,558	- -	2,534
27	1848-49	3,001	3,499	6,500	53,087	48,670	1,01,757	3,883	5,110	1,120	2,109	794	445	1,579	- -	3,957
28	1849-50	365	2,975	3,340	52,693	49,935	1,02,628	3,894	4,743	835	1,673	886	369	1,497	- -	6,271
29	1850-51	205	2,229	2,434	59,442	49,094	1,08,536	3,483	4,728	857	1,555	1,543	328	1,185	- -	5,315
30	1851-52	348	1,566	1,914	56,652	48,434	1,05,086	3,798	3,965	1,185	1,489	1,342	386	1,098	- -	3,098
TOTAL - - -		50 197	56,010	1,06,207	13,80,695	15,91,690	29,72,385	98,317	1,07 287	25,900	87,478	28,870	18,670	18,466	4,685	1,16,171
Average - -		2,091	1,039	3,662	57,525	53,056	99,079	3,278	3,699	863	2,916	962	622	1,846	1,561	6,453
Quinquennial Average	First -	- -	2,935	2,935	- -	46,922	46,922	1,731	3,219	619	3,177	1,344	1,037	—	—	—
	Second -	735	1,695	2,430	39,639	54,721	94,360	2,229	3,430	1,589	4,538	1,275	860	—	—	—
	Third -	1,723	696	2,419	66,657	54,863	1,21,460	3,302	1,971	459	3,228	978	366	- -	517	13,007
	Fourth -	2,643	758	3,401	49,853	59,041	1,08,894	4,484	[illegible],787	747	2,616	552	602	- -	95	852
	Fifth -	3,395	2,448	5,843	61,079	54,077	1,18,156	3,316	4,294	772	2,133	566	474	2,110	525	5,140
	Sixth -	1,543	2,669	4,212	55,911	48,774	1,04,685	3 711	4,756	994	1,803	1,060	395	1,583	- -	4,235

Note.—In Column No. 71 are included—1. Pensions of general nature 2. Native Pension Fund 3. [illegible]

No. 7 —REVENUE and FINANCE Transactions of Thirty Years ending 11th July 1852—continued.

umber.	YEAR.	OTHER CHARGES											Net Revenue after deducting the Charges in Column 90 from Column 63. 91
		CHARGES								TOTAL.		Net Charges after deducting the Amount in Column 88 from Column 89 90	
		General Charges Extraordinary 80.	General Buildings, and Repairs of Ditto 81.	Extra General Charges, Arrears of Ditto. 82	Public Instruction. 83.	Thug Department, Law Charges, Refunds of Medical Funds 84	Military Books 85	Refunds of Subscription to the late N P F 86.	TOTAL. 87.	Receipt of Columns 67 and 71 88.	Charges of Columns 70 and 87 89*		
1	1822-23	2,202	- -	- -	- -	- -	1,441	- -	16,582	5,356	63,586	58,230	16,32,883
2	1823-24	4,775	- -	- -	- -	- -	- - -	- -	16,285	5,134	60,892	55,758	17,93,248
3	1824-25	957	- -	- -	- -	69	47,915	- -	58,027	2,751	1,03,150	1,00,399	17,02,972
4	1825-26	21,361	- -	- -	- -	- -	72,490	- -	1,02,465	4,732	1,48,158	1,43,426	15,78,206
5	1826-27	33,139	- -	- -	- -	- -	1,19,629	- -	1,57,601	5,358	2,09,786	2,04,428	15,03,354
6	1827-28	1,447	- -	- -	- -	- -	83,716	- -	95,178	4,453	1,64,700	1,60,247	15,88,588
7	1828-29	11,156	- -	- -	- -	- -	87,491	- -	1,13,822	7,095	2,24,449	2,17,354	15,25,048
8	1829-30	4,465	- -	- -	- -	633	54,553	- -	71,574	5,653	1,81,341	1,75,688	17,57,193
9	1830-31	10,074	- -	- -	- -	- -	63,945	- -	85,192	5,196	1,81,006	1,75,810	14,92,899
10	1831-32	12,093	- -	- -	- -	- -	85,609	- -	1,07,876	4,896	1,93,945	1,89,549	14,87,419
11	1832-33	- -	- -	23,362	324	- -	81,983	- -	1,14,834	4,393	2,55,590	2,31,197	5,54,891
12	1833-34	- -	- -	34,538	324	- -	70,828	- -	1,77,083	5,934	3,30,726	3,24,792	8,93,135
13	1834-35	- -	43	4,246	324	- -	52,629	- -	63,918	6,112	1,76,529	1,70,417	8,46,649
14	1835-36	- -	110	1,781	344	- -	55,489	- -	64,153	4,698	1,61,382	1,56,684	9,60,442
15	1836-37	- -	66	1,488	- -	- -	77,691	- -	88,165	7,774	1,91,226	1,83,452	8,38,677
16	1837-38	- -	1,063	1,457	- -	- -	58,820	- -	68,217	8,575	1,72,223	1,63,648	9,09,026
17	1838-39	- -	395	1,976	- -	2	54,599	- -	65,264	8,646	1,77,992	1,69,346	10,12,066
18	1839-40	- -	266	1,840	- -	1	63,731	1,650	76,154	9,421	1,92,703	1.83,282	10,82,078
19	1840-41	- -	- -	1,690	- -	123	68,811	176	82,054	6,306	1,88,737	1,82,431	10,99,944
20	1841-42	- -	93	2,513	- -	- -	94,209	18,855	1,26,836	6,479	2,31,340	2,24,861	9,71,732
21	1842-43	- -	46	2,050	- -	- -	75,028	11,300	1,19,409	8,106	2,22,629	2,14,523	8,75,657
22	1843-44	- -	- -	47	- -	1	90,220	1,189	1,02,629	7,459	2,25,858	2,18,399	8,10,364
23	1844-45	- -	- -	- -	- -	- -	66,753	- -	79,859	6,950	2,05,481	1,98,531	9,45,259
24	1845-46	- -	2,899	- -	- -	- -	76,024	142	90,107	10,744	2,13,126	2,02.382	13,63,208
25	1846-47	5	- -	74	- -	- -	91,007	141	1,03,983	13,036	2,19,673	2,06,637	13,94,934
26	1847-48	- -	995	765	- -	- -	77,551	391	94,383	10,521	1,99,800	1,89,279	14,50,775
27	1848-49	379	284	- -	- -	- -	79,412	126	95,315	10,383	1,97,072	1,86,689	15,51,620
28	1849-50	- -	395	59	- -	- -	79,759	212	96,693	7,234	1,99,321	1,92,087	15,79,668
29	1850-51	214	454	35	- -	- -	78,936	2	95,152	5,917	2,03,668	1,97,771	13,25,506
30	1851-52	96	418	107	- -	- -	77,681	61	90,926	5,712	1,96,012	1,90,300	13,57,648
TOTAL - - -		1,02,363	7,527	78,028	1,316	829	20,87,900	34,245	27,19,763	2,01,524	56,92,121	54,87,597	37,585,089
Average - -		7,311	537	459	329	138	71,996	2,853	90,658	6,817	1,89,737	1,82,919	12,52,886
Quinquennial Average.	First -	12,487	- -	- -	- -	14	48,295	- -	70,192	4,666	1,17,114	1,12,448	16,42,132
	Second -	7,847	- -	- -	- -	127	75,063	- -	94,728	5,359	1,89,088	1,83,730	15,70,229
	Third -	- -	44	13,083	263	- -	67,714	- -	1,01,631	5,782	2,23,091	2,17,308	7,58,759
	Fourth -	- -	363	1,895	- -	25	68,034	4,136	83,705	7,885	1,92,599	1,84,714	10,14,969
	Fifth -	1	589	434	- -	- -	79,806	2,554	99,197	9,259	2,17,353	2,08,094	10,77,884
	Sixth -	138	509	193	- -	- -	78,668	158	94,494	7,953	1,99,179	1,91,225	14,53,043

On a general review of all that has been adduced in the foregoing memo. and statements, these three reflections suggest themselves —

First, the great use of collecting and arranging all our available statistical information.

Second, that a vast amount of such information, quite accurate enough for practical purposes, can be obtained as in the case of Guntoor, without a professional survey. Indeed, every particular, except a mathematically exact measurement of land, can be supplied by our own agency.

Third, that the rates of assessment in Guntoor, both in wet and dry land, are exceedingly moderate, and that the district is now well peopled and stocked; yet that it has not progressed for some years. This is explained apparently by the absence of export traffic, and hence the need of canals and other communications.

(signed) *H. Stokes.*

REVENUE DEPARTMENT.

(No. 491.)

EXTRACT from the Minutes of Consultation, under date the 26th April 1855.

READ the following letter from the Secretary to the Board of Revenue —

Returning, with reference to Extract Minutes Consultation, 14th April 1855, the papers connected with the Godavery and Krishna Works, and stating the reason why delay has occurred in furnishing the information called for regarding these works.	Here enter 19th April 1855, No. 914.

1. The Government resolve to transmit the papers received with the foregoing letter to the Commissioner for the Northern Circars, together with copy of Extract Minutes Consultation of 29th May 1852, No. 493, and paras. 1 and 3 of that of 7th December 1854, No. 1592, as well as of the Board's Proceedings of 2d April 1855, No. 822, with the request that he will supply at his early convenience the information required

2. The Commissioner will perceive that it is the wish of the Government, for the complete avoidance of error on a subject of so much importance, and on which such different opinions are entertained, that the interesting and able reports by Mr. Taylor on the works in Rajahmundry should be carefully tested, and that, in order to complete the subject, information similar to that afforded by Mr. Stokes respecting the Guntoor district should be obtained from that of Masulipatam. The Governor in Council hopes that Mr. Goldingham will be able to give the subject his very early attention.

3. It is here only necessary to notice one subject treated of in Mr. Taylor's reports, viz., that of Teerwajasty, or addition of demand on account of the irrigation supplied by the new works. The Government are fully alive to the good policy of liberality in this matter, and wish the increased demand to be made, neither too soon nor at too high a rate. But there is a proper limit to this indulgence. The Government are obliged to consider alike the interests of all parts of its territories, and extraordinary moderation can only be shown in Rajahmundry, by continuing burdens admitted to be excessive in other districts. The fact noticed by Mr. Taylor,* that in many instances the assessment of Poonjah land is higher than that of Nunjah, does not appear of much consequence in the matter. It is certain that in peculiarly favourable localities, such as are to be found in parts of the Rajahmundry district, Poonjah land yields more than poor and precariously-irrigated Nunjah, such as much of that in this district has hitherto been.

* Report, without date, para. 26.

4. A good survey and a careful and skilful reassessment are, no doubt, necessary to adjust the old assessments to the new state of things; but meanwhile something may be done towards obtaining a moderate return to Government for its outlay. In Extract Minutes of Consultation, 5th January 1855, the Government passed orders on the late Commissioner's proposal for doing that, by levying a sum on each kind of crop raised by the aid of Government water, supposed to be equivalent to a certain proportion of the profits to the ryots from such crop.

Though objecting to the principle of making the rate vary with the crop, the Government sanctioned the proposed measure, pending the introduction of a survey. It would seem very desirable, however, that it should be considered whether, even retaining that principle, a certain rate for an acre or other given extent, for each of the kinds of crop, might not be fixed so as to lessen the large quantity of inquisitorial interference, apparently involved in the plan as it now stands. The present Commissioner may also consider whether a uniform rate per acre might not be adopted in place of varying the rate with the crop, only making a difference between those kinds of crop which need full irrigation, and those which consume a much smaller quantity of water. This would still further lessen interference, and would also abolish the premium on the cultivation of inferior crops held out by this opposite plan.

5. In submitting the information called for above in para. 2, Mr. Goldingham will be good enough to give attention also to this part of the subject, and to give both a statement of the extent of land now liable to Teerwajasty, and the amount, with as much accuracy as may be attainable, and also an estimate of the probable extent and amount still to be anticipated. Similar information should be given respecting the zemindaries.

(True extract.)
(signed) *J. D. Bourdillon,*
Secretary to Government.

Revenue Department.

Extract from the Proceedings of the Board of Revenue, dated 21st May 1855, No. 1325.

In accordance with the instructions of Government conveyed in Extract Minutes of Consultation, dated 7th December and 14th April last, the Board proceeds to scrutinize the detailed statements furnished by the Collector of Tanjore regarding the revenues and maramut* expenditure of his district, and to offer remarks on the effect which the Coleroon annicuts have had upon the Government revenue and prosperity of that province. The subject to which the attention of the Board is thus directed includes some of the statements which were made by Colonel A. Cotton in his book on "Public Works in India," and are contradicted by P. B. Smollett, Esq., in his pamphlet, "Modern Hydraulic Works in Tanjore and Rajahmundry examined," as Government make special allusion to the discordant publications of those two gentlemen.

2. The Board will first offer remarks on the Collector's detailed statement of the revenues of Tanjore, which has been forwarded for their scrutiny. It exhibits the revenues of that province as realized "from all sources, from fusly 1210 to 1262, A. D. 1800 to 1852," and is accompanied by a memorandum explaining the manner in which, for the sake of clearness, it has been drawn out. Modifications, for example, have been made in the revenue entries on account of occasional alterations in the area of the district, such as the transference of the Karical villages to the French, and the incorporation of Tranquebar, which would otherwise have vitiated the comparison of one period with another; the collections have been carried to the account of the year for which they were due, although made in a subsequent one; and the provincial currency of chuckrums and fanams has been converted into Madras pagodas at one uniform rate, although there was a difference in rates of conversion employed previously to and after 1817. The Collector's statement thus differs from the detail of the revenues of the province in the Board's office; but, allowing for the causes which have led to this variance, the Board see no reason to question its substantial accuracy, and propose to make use of it in these proceedings. A comparison between the Board's accounts and the Collector's statement gives the following result:—

---

* The term Maramut, so well known in this Presidency, includes all works of irrigation and communication, channels, tanks, bridges, roads, &c., and will be used in this sense in these proceedings for the sake of comprehensiveness and brevity.

QUINQUENNIAL AVERAGES of TANJORE REVENUES, according to actual Collections

—	From Collector's Statement.			From Board's Records.		
	Land Revenue.	Extra Revenue.	Total.	Land Revenue.	Extra Revenue.	Total.
	Rs.	*Rs*	*Rs.*	*Rs*	*Rs.*	*Rs.*
Five years, $\frac{1210}{1800}$ to $\frac{1214}{1804}$	31,77,639	1,63,047	33,40,686	Incomplete in the Board's Office.		
Ditto 1215 to 1219	32,77,314	3,05,733	35,83,047	32,35,843	3,05,365	35,41,208
Ditto 1220 to 1224	32,47,593	5,77,064	38,24,657	33,58,266	5,81,147	39,39,413
Ditto 1225 to 1229	32,15,128	6,82,704	38,97,832	31,61,382	6,79,773	38,41,155
Ditto 1230 to 1234	37,59,763	8,82,975	46,42,738	38,65,535	8,93,194	47,58,729
Ditto 1235 to 1239	32,76,131	9,63,353	42,39,484	32,14,397	9,47,300	41,61,697
Ditto 1240 to 1244	36,34,147	9,37,012	45,71,159	36,88,654	9,47,109	46,35,763
Ditto 1245 to 1249	36,76,830	9,95,467	46,72,297	36,98,124	9,96,892	46,95,016
Ditto 1250 to 1254	36,36,967	9,56,917	45,93,884	36,29,160	9,56,788	45,85,948
Ditto 1255 to 1259	40,00,160	8,99,375	48,99,535	40,04,472	8,98,822	49,03,294
Ditto 1260 to 1262	38,80,086	9,81,600	48,61,686	38,70,210	9 78,009	48,48,219

3. The Board now proceed to the next branch of the subject, and observe, that Colonel Cotton has estimated the effects of improvement in works of irrigation, bridges, and roads in Tanjore, in two forms. The first embraces the whole period that the district has been under British rule, and the second the period since the construction of the Coleroon annicuts in 1836. It is the latter of these periods that comes most directly under the Board's consideration, and they doubt whether they are required to report how far the general expenditure on public works during a period of 50 years has affected the revenue, a point which cannot be clearly ascertained, and must rest much on individual opinion; but as some observations are doubtlessly expected from them regarding Colonel Cotton's statements of the amount expended on public works, and the extent to which the revenues have increased, they beg to submit the following remarks.

4. In pages 19 and 62 of his book, Colonel Cotton observes, that an annual expenditure of 40,000 rupees, on works of irrigation and communication steadily pursued for 50 years, and amounting on the whole to 20 lacs (200,000 *l.*), has increased the public revenue to a similar extent, or 20 lacs per annum, an assertion which is contradicted by Mr. Smollett. (Pamphlet, page 3, *et seq.*) Colonel Cotton appears in this passage to omit expenditure on repairs, and allude to new works alone; for at page 13 of his book he speaks of the annual Maramut expenditure as 80,000 rupees, which would raise the total outlay for the period under discussion from 20 to 40 lacs, while in his report on the irrigation of the Rajahmundry district he mentions 32 lacs as having been expended on irrigation alone in Tanjore during the first 40 years of our rule; but the total expenditure of Government amounts to the larger sum of 52 lacs (*see* Appendix B.), of which 43 lacs were expended on works of irrigation and 9 lacs on works of communication, and as far, therefore, as the increase in Tanjore revenues is to be ascribed to public works, the Board consider that it must be attributed to an expenditure of 52, and not of 20 lacs.

Dated 12th August 1844, *see* quotation from it, *i. e.* 1st Report of the Public Works Commissioners, page 255.

5. Colonel Cotton's statement of the Tanjore revenues having increased 20 lacs, or from 30 to 50 lacs per annum, requires also some modification. It may be assumed that Colonel Cotton, in speaking of this supposed increase, alluded not only to the land revenue, but also to what are termed the extra sources of

revenue, such as salt, sea, and frontier customs, stamps, abkarry, moturpah, &c The actual collections under all heads in every year from fusly 1210,* the first of our administration, to fusly 1262, are therefore exhibited in Appendix (A.), and the examination of them calls for the following observations. Omitting fusly 1210, when the land revenue was improperly increased one-fifth by the Collector raising the Government share of the produce, an error which was corrected in the subsequent fusly, the revenue collections of the first five years of our rule were as follows:—

Fusly.	Land Revenue.	Extra Sources.	TOTAL.
	Rs.	*Rs.*	*Rs.*
1211 - - -	31,27,714	1,54,755	32,82,469
1212 - - -	26,63,257	1,14,045	27,77,302
1213 - - -	23,58,761	1,04,268	24,63,029
1214 - - -	33,31,028	1,83,540	35,14,568
1215 - - -	31,00,301	2,65,148	33,65,449
Average - *Rs.*	29,16,212	1,64,351	30,80,563

The average total revenue of this period may therefore be assumed at 31 lacs; and if the average of the last five years of Colonel Cotton's series is examined, it will be found to be rather above 48 lacs.

Fusly.	Land Revenue	Extra Sources.	TOTAL.
	Rs.	*Rs.*	*Rs.*
1257 - - -	39,11,819	9,12,594	48,24,413
1258 - - -	37,55,985	8,74,285	46,30,270
1259 - - -	38,64,907	9,31,366	47,96,273
1260 - - -	39,03,575	9,91,567	48,95,142
1261 - - -	39,07,644	10,11,859	49,19,503
Average - *Rs.*	38,68,786	9,44,334	48,13,120

The increase may therefore be taken at 17¼ lacs, of which 9½ lacs occurred in the land, and 7¾ lacs in the extra sources of revenue. There are only three years when the revenues have exceeded 50 lacs, one before and two after the construction of the Coleroon annicuts, viz.:

Fusly.	Land Revenue.	Extra Sources.	TOTAL.
	Rs.	*Rs.*	*Rs.*
1234	49,63,433	9,19,716	58,83,149
1255	42,44,277	8,57,037	51,01,314
1256	42,23,812	9,21,593	51,45,405

---

* The fusly or revenue year commences in July; fusly 1210 commenced in July A. D. 1800, and ended in July 1801.

6 But although a comparison of the first and last quinquennial periods of Colonel Cotton's series gives an increase of 17¼ lacs, this by no means implies, nor do the Board suppose that Colonel Cotton intended to imply, that there has been an average increase to that extent per annum throughout the whole period The fact simply presents a contrast between the extreme periods of a series of years when the revenues happened to be at their lowest and highest points, and the Board would submit that the correct mode of putting the case would be, to state that the revenue has risen from 31 to 48 lacs (and not 30 to 50) in the course of 50 years. A comparison of the revenue of the first quinquennial period (31 lacs) with the average of the next 48 years, or from fusly 1216 to 1262 inclusive, shows an annual average increase of 12½ lacs, of which as nearly as possible half occurred in the land and half in the extra sources of revenue.

See Appendix (A.)

7. After thus ascertaining that in the course of 50 years, the revenue has risen from 31 to 48 lacs, the question arises how far the increase of 17 lacs is due to the expenditure which has been made upon public works As this is a point upon which it is evident that accurate data cannot be obtained, and respecting which individual opinions may be expected to vary, the Board will not attempt to define with precision what part of the increase is due to maramut expenditure, and what portion is to be ascribed to a better revenue administration and other causes They feel, however, called upon to offer some general remarks on the subject, and to state that a consideration of the question leads them to concur with Mr Smollett, that the greater portion of the increase cannot be ascribed to the outlay which has been made upon public works

8. It is first to be observed that 7¾ lacs of the increase have occurred in the extra revenues, and are clearly due in the main part to our mode of administration, under which new branches of taxation have been opened, such as the salt monopoly in 1805, and the stamps and abkarry in 1808, while the sea customs and other branches of revenue were placed on an enlarged and better defined footing In support of this view, the average collections under the above specified branches of revenue at the commencement of our rule, and during the last quinquennial period in the Collector's statement are here given

Average Collections

	Five Years $\frac{1210}{1800}$ to $\frac{1214}{1804}$	Five Years $\frac{1255}{1845}$ to $\frac{1259}{1849}$
	Rs.	*Rs*
Salt - - - - - - -	4,622	4,81,298
Sea Customs - - - - -	29,262	1,91,873
Abkarry - - - - - - -	13,994	92,100
Stamps - - - - - - -	- - - -	40,453
	47,878	8,05,724
Increase in last Period - - -	- - - -	7,57,846

Of this increase of revenue, the portion which could most confidently be attributed to maramut expenditure would be that in the sea customs, if the additional receipts had arisen from enlarged exports of produce; but on scrutinising the accounts at the earliest period for which they can be obtained, and comparing them with the present, it is found that $\frac{9}{10}$ of the increase is in the imports, and even as far as increased imports are a sign of enlarged wealth, this improvement of condition cannot be assigned to Tanjore alone, as articles required for the consumption of the adjacent inland

Note—The exports by sea from Rajahmundry have increased six-fold since the Godavery works *See* Captain Randall's Report, dated 24th April 1855, No 1303 Para. 242—Department Public Works.

	Exports	*Imports*
Average collections of fuslies 1235 to 1239	37,039	43,735
Ditto of 1260 to 1262	49,283	1,48,668
Increase in latter period	12,244	1,04 933

Note.—Trichinopoly, Salem and Coimbatore.

districts are landed at its ports. The Board will not pursue this subject further, since under any circumstances, it would apparently be impossible to define how far additional irrigation works and improved roads, have affected these sources of revenue, and the inquiry is complicated by the fiscal changes which have occurred, such as alterations in the prices of salt and in the stamp duties, and the abolition of the land customs in 1844, accompanied by an increase in the rates of the sea customs duties, and in the monopoly price of salt. It seems sufficient for the Board to repeat their opinion that the increased receipts derived from the extra sources of revenue are mainly ascribable to the opening of new heads of taxation, such as the salt and stamps, &c., the remodelment of other branches, and to observe that this view is supported by the result of our administration in other districts, where these revenues have also increased, although no large expenditure has been made on roads and irrigation improvements.

9. The increase of 9½ lacs which has taken place in the land revenue is next to be considered, and when we look back to the revenue administration of Tanjore during the first quinquennial period, with which the comparison is made, it seems reasonable to conclude that the increase is owing in a considerable degree, (not entirely, for since 1836 the annicuts have produced a direct effect, which will be noticed hereafter,) to a more efficient and better organised system of management. Late years present a far different example of administration and security to the people than do those of 1801, 1805. The Board would not wish to reflect on the character of Mr. Harris, who subsequently obtained such a high degree of confidence, but it is true that the records of the Board show that his management was worse than defective, and such as must have very greatly affected the just rights of Government. It may be sufficient to quote from a minute of Lord W. Bentinck, dated 21 September 1840, when, in consequence of the report of a special committee, he removed Mr. Harris from his situation as Collector of Tanjore "The principal fact which we have now under our consideration, is the existence of a general combination between the Circar servants and the landholders to defraud the revenue. It appears that the conspiracy has not been confined to a remote part of the province, or to a few individuals, but has extended to every part, and has involved every person, that it has been in full effect during the last two years and a half, that 3,10,000 pagodas* is the amount of frauds upon the revenue, and of exaction upon individuals." It was not likely that Tanjore could soon recover itself, and in 1807, another commission was appointed, to introduce some regular system of revenue, since which time it has prospered. The Board, therefore, cannot think it fair to contrast the revenue of those days with the present, and attribute the entire difference to works of irrigation, bridges, and roads, especially when it is to be observed from the statement of maramut expenditure given in Appendix (B.), that the revenues do not show the greatest increase when the largest outlay was made. Although, therefore, the Board would be most unwilling to dispute that the expenditure on public works in this province has had a beneficial effect on the land and extra sources of revenue, and are, on the contrary, satisfied that it has been profitable both to the Government and the province, they cannot concur in the very high influence on the Government revenues which has been attributed to it by Colonel Cotton.

* 10,65,000 Rupees.

Note—In the first 36 years, or up to the construction of the Coleroon annicuts, the expenditure amounted to 30 lacs, and the annual revenue rose 15 lacs, while in the next 17 years, the outlay has been 20 acs, and the annual revenue has risen 2¼ lacs only, though the annual expenditure was considerably larger.

10. It has been explained in para. 5, why, in examining this part of the question, it appeared just to Colonel Cotton to leave fusly 1210 out of the comparison, on account of the height to which the mistaken zeal of the Collector raised the land revenue by an improper exercise of authority. It remains to add, that in a similar spirit of fairness, fusly 1263, has not been included in these proceedings. Fusly 1262 was itself an unfavourable year in Tanjore on account of the damages done by a hurricane; but although the remissions which were necessary† on this account, reduced the collections, the produce was not otherwise below the average, and this year has been included in the accounts. Fusly 1263, which followed it, was however a season of almost unparalleled drought, and of so disastrous and exceptional a character, that allegations might have been made against the justness of the results arrived at if this season had been brought into the accounts by the Board, especially as the closing year of the period under review.

† Government remitted Rupees 2,64,613.

11. The Board now proceed to the subject of the Coleroon annicuts, which has been more especially referred for their consideration, and as detailed descriptions of these works are already before Government in various reports, and are also to be found in the printed professional papers of the corps of Engineers, and in the first report of the Madras Public Works Commissioners, it is sufficient to make a brief allusion to the purposes for which they were constructed.

The irrigation of Tanjore depends almost exclusively on the Cauvery river, which divides into two branches a few miles to the west of Trichinopoly, one of which retains the same name, while the other is called the Coleroon. For many years the bed of the Cauvery was found to be silting up, while that of the Coleroon was deepening, so that most of the water which was required for the irrigation of Tanjore escaped uselessly to the sea by the latter river. Much expense was annually incurred in clearing the sand out of the Cauvery bed to remedy this evil, but this and other expedients produced only a temporary improvement, and at last a proposal made by Captain A. Cotton to throw an annicut across the head of the Coleroon was adopted. But as this measure was likely to diminish the irrigation supplied from the Coleroon to the Manargoody and Chellumbrum Talooks of South Arcot, a second annicut was at the same time thrown across the Coleroon just below the head of the Vadavaur, through which an increased supply of water is now poured into the Veeranum tank, while two new and important channels have been excavated, the South Rajah Voikal for the benefit of the Sheally Talook of Tanjore on the south side of the river, and the North Rajah Voikal for improving the general irrigation of Manargoody and Chellumbrum. These large masonry weirs were constructed in 1836, and are called respectively the upper and lower Coleroon annicuts. The first came into operation in fusly 1246 (1836), all the channels of the latter were not ready to supply irrigation till the following year 1247 (1837).

12. The Board propose to consider the questions connected with the annicuts in the following order.

1st. Have these works increased the public revenue 10 lacs per annum, raising it from 42 to 52 lacs, according to the assertion which is made by Colonel Cotton at page 208 of his book, and which forms one of the points on which he is contradicted by Mr. Smollett?

2nd What is the actual addition which the annicuts can be shown to have made to the land revenue?

3rd. What has been the cost of these works and the net profit derived from them? After considering these points, the Board will conclude with offering a few remarks on the general subject.

13. It is here proper to allude to the question, "Which is to be considered the first year in which the effect of the upper or principal annicut was felt in Tanjore?" A discussion formerly took place on this point, and it was eventually ordered by the Board that fusly 1246 should be considered the first annicut year, a decision which seems correct, as the Principal Collector had observed * when reporting on that season. "But for the effects of the upper Coleroon annicut in throwing an unusual quantity of water into the Cauvery the failure of crops must have been immense." As the river freshes were so scanty in that year as to diminish the land under cultivation, the question is of some importance, since the great test for ascertaining the efficiency of the annicuts is to compare the extent of wet cultivation before and after they were built, and it is consequently unfavourable to the upper annicut, that a year in which the river supply was so deficient should have followed its construction. The Board observed, that Mr. Smollett in his pamphlet includes fusly 1246 in the series of years before the annicut, but that gentleman founds all his arguments on the amount of the land revenue settlement or demand, and in a revenue point of view fusly 1246 was not an unfavourable year, since, under the Oolungoo system, which will be hereafter alluded to, and which is explained in Appendix (C.), the high price of grain added more in that year to the revenue demand than was lost by a falling off in the extent of land under cultivation.

14. The Board now proceed to the consideration of the first of the three questions connected with the annicuts,—Colonel Cotton's estimate of their having added

---

* Principal Collector, Mr Kindersly, to Board, 27 October 1839, p. 2.

added annually 10 lacs, or 1,00,000 *l.* sterling to the Government revenues. It is presumed that Colonel Cotton alluded to the general revenues, and not to the land revenue only; but even regarding the subject in this extended view, the Board cannot find that any such annual increase as 10 lacs has followed the construction of the Coleroon weirs. The revenues of Tanjore, both before and after the construction of these annicuts, can be referred to in Appendix (A.), and the Board propose to elucidate the point under discussion by contrasting the two periods of ten years which immediately preceded and followed the construction of the upper annicut. They are not aware that any just exception can be taken to this comparison, as the first period includes some unfavourable seasons, and the time when the failing state of the Cauvery irrigation attracted most notice.

——	Land Revenue.	Extra Sources.	TOTAL
	Rs.	*Rs.*	*Rs.*
Average Collections of 10 years before Annicut, 1236 to 1245 inclusive - -	3,438,144	958,630	4,396,774
Average Collections of 10 years after Annicut, 1246 to 1255 inclusive - -	3,745,241	961,439	4,706,680
Increase in latter Period - - -	307,097	2,809	309,906

See Statement furnished by Collector of South Arcot attached to Appendix (D.)

Adding to the increase thus shown, 90,000 rupees on account of the improvement made to the revenue of the two Southern Talooks of South Arcot by the lower annicut, the total annual increase in the latter period is found to fall somewhat short of 4 lacs, and even therefore if all this additional revenue is admitted to be due to the annicuts, the Board would feel that Mr. Smollett had not impugned Colonel Cotton's assertion of an annual addition of 10 lacs without good grounds.

See Appendix (C.)

Extract Minutes of Consultation, 26th April 1842, para. 6.

15. The second question then comes under consideration, what is the actual addition which the annicuts can be proved to have made to the land revenue? and the Board propose to ascertain this point by examining the extent of wet land under cultivation before and after their construction and the revenue derived from it. Easy, however, as this course might be expected to prove, considerable difficulty is experienced in ascertaining the exact addition which the Coleroon annicuts have made to the revenues of the state, in consequence of the various modes of assessment which prevail in Tanjore, inclusive of grain and village rents, and the manner in which the revenue payable to Government by the landholders under the Oolungoo system is affected by the price of grain. This latter circumstance leads to the anomaly that a decrease of revenue accompanies occasionally an increase of cultivation or the converse, and it was with reference to this difficulty that Government recorded the following observations. "The price which the produce may realise cannot fairly enter into a comparison of the effects of the annicuts. Prices in Tanjore depend upon external circumstances, and the results of the season in other districts, and the only fair test of the effects of the annicuts is the extent to which they ensure and control the irrigation of the country."

16. The effect which the annicuts have had in "ensuring the irrigation of the country" is to be regarded in two points of view; 1st, the increased extent to which cultivation has been carried on in the river irrigated lands; 2ndly, the additional productive power conferred on these lands, as shown in the produce returns, the diminished amount of remission granted for failure of crops, and the additional money value which land has acquired. As the immediate point under inquiry is the actual increase of revenue which Government has gained by the annicuts, the first of these two heads will now be considered, such additional revenue as appears to have arisen from the conversion of dry land into wet, and the extended cultivation of a second rice crop being at the same time adverted to.

17. Since the construction of the upper annicut, its effect on the land revenue of Tanjore has been specially noticed, by order of the Board, in the annual Jummabundy reports, and has formed the subject of continual scrutiny and comment. Although, therefore, fluctuations of price have affected the annual settlements and the precise additions made to the revenue by dry land being converted into wet, or single crop into double crop land, cannot be ascertained in consequence of many villages being rented out, materials exist for showing with confidence the additional amount of revenue which is ascribable to the annicuts For this purpose it is proposed in the first instance to ascertain the total area of the land under river irrigation, and to compare the portion of it which has been cultivated previously to and after the construction of the annicuts The assessment actually levied on the additional area under cultivation will be then shown as well as the revenue which would have been collected upon it, if the price of grain had not fluctuated, but remained at the standard rate.

18. The river irrigated area of Tanjore comprises 97,006 valies, and on comparing the portion cultivated before and after the annicuts, the following result is obtained.

——	Average Cultivation.	Standard Beriz.	Settlement Beriz at Current Price.	Revenue actually realised, deducting subsequent Remissions
	Valies	*Rupees.*		
Before Annicut, from Fusly 1240 to 1245 both inclusive	83,581	28,67,437	28,31,404	28,06,554
After Annicut, from Fusly 1246 to 1262 inclusive	90,277	30,83,466	30,11,448	29,84,506
Increase - - -	6,696	2,16,029	1,80,008	1,77,952

Appendix (E) contains details of this comparison, with explanation why the accounts have been made to commence with fusly 1240 and it will be observed that the cultivation of the river lands has increased by 6,696 valies, or 8 per cent, since the construction of the annicuts, and that the annual addition thus earned by them to the land revenue of the province consists of 1,77,952 rupees

19 Inquiry has been made whether any sum is to be added to the above increase on account of the effects of the annicuts in converting dry land into wet, or enabling a second rice crop to be raised on single crop land Information on this point was specially called for by the Board in 1838 with respect to the upper or most important annicut, but the principal Collector observed in reply, that the chief object of the annicut was to restore the deteriorated irrigation of the province, and that its beneficial results were then visible only in the more extensive and successful cultivation of the wet (nunjah) lands. On scrutinising the Jummahbundy accounts of the following years, the same result appears, and the increase of revenue from wet cultivation on dry land and the extension of a second crop is so insignificant, that it is proposed to omit these items altogether in considering the effects of the upper annicut. To account for this result it may be observed, that the land in the Tanjore Delta has been always rated as nunjah, that from the absence of tanks and reservoirs for storing up water, second crop cultivation has been always limited, and that from the nature of the revenue system in the Oolungoo and rented villages, additions on account of second crop cultivation, or the conversion of dry land into wet, are mixed up with the general increase of the revenue.

Principal Collector to Board, 11th August 1838

Note —The largest increase on account of dry land converted into wet is in the Jummahbundy accounts of 1262, and consists only of 1,189 rupees The largest increase on account of increased second crop cultivation is in 1257, and deducting the decrease under the same head, is limited to 3,469 rupees.

20 According, therefore, to the comparison given in para. 11, the Board are of opinion that the actual increase of revenue directly ascribable to the two annicuts in Tanjore amounts to the annual sum of 1,77,952 rupees, and they consider that this is no imaginary or hypothetical gain to Government, but one that is clearly established by the annual accounts of the lands under cultivation for which assessment was paid, and by the amount of the collections received

into the public treasury. The total annual increase of land revenue ascribable to the two annicuts is therefore as follows :

	Rupees.
Increase caused by the upper and lower annicuts in Tanjore	1,77,952
Do. by the lower annicut in South Arcot- - - -	90,000
Total Increase - - *Rs.*	2,67,952

This result corresponds closely with those* entered in the printed list of special works of irrigation prepared by the Board of Revenue, Department Public Works, under date 14th May 1852, and in the Report† of the Public Works Commissioners written in the same year. It also confirms generally the anticipations which were expressed when the construction of the annicuts was under consideration. The calculations then made were as follows :—

Report of Captain A. Cotton to Inspector General, 15th July 1834.
Ditto of Mr. Kindersley, Principal Collector of Tanjore, to do. 6th August 1834.
Do of Mr. Dent, Principal Collector of South Arcot, to do. 12 December 1834.

	Rupees.
UPPER ANNICUT.	
Expected immediate increase in Tanjore from the regular and secure cultivation of the lands dependent on the Cauvery river, exclusive of further after additions - - - -	1,00,000
LOWER ANNICUT.	
Expected increase chiefly in South Arcot, from waste land being cultivated and dry land converted into wet - - - - -	1,30,000
Rs.	2,30,000

Having thus shown that an actual and *bonâ fide* increase of revenue to the amount of 2,67,952 rupees per annum is directly ascribable to the two annicuts, some brief observations will be made hereafter on the general advantages they have conferred on Tanjore by securing the land revenue, increasing the value of land, and adding to the general prosperity of the province.

21. The Board now approach the third branch of the subject, the cost of the two Coleroon annicuts, and the net amount of revenue which they have yielded to the state. The sums expended on these works, and the per-centage which the net profit yielded by them bears to the original outlay, underwent careful scrutiny by the Department of Public Works, and the Mahramut Commissioners, and the result ‡ at which they arrived after examining the bills and revenue statements was as follows :—

———	Amount of First Expenditure.	Net Annual Profit.	Per centage of Profit on Outlay.
	Rupees.	*Rupees.*	*Rupee*
Upper Annicut - - - - - - -	83,401	1,20,702	144
Lower Annicut in South Arcot - - -	74,234	98,786	133
Lower Annicut in Tanjore - - - -	60,752	8,788	14
Rs.	2,18,389	2,28,276	104

First

---

* Upper Annicut in Tanjore - - - - - - - - - -	1,73.575
South Rajah Voikal in do. - - - - - - - -	13,511
Lower Annicut in South Arcot - - - - - - - -	1,01,640
Total Annual Increase - - -	2,88,727

† *See* Para. 273 and Appendix (R.).

Upper Annicut - - - - - - - - - - -	1,38,861
South Rajah Voikal in Tanjore - - - - - - - -	13,511
	1,15,081
	2,67,453

‡ *See* printed list of special works, dated 14th May 1852. First Report of Public Works Commissioners, para. 273.

First obtaining the original cost of the annicuts and their dependent works from the sanctioned bills, the additional revenue derived from them was next ascertained, and the net profit was fixed by deducting the outlay incurred in repairs, making at the same time an allowance for the expenditure saved to Government by their construction. Previously to the upper annicut being built, the defective state of the Cauvery irrigation led to large sums being expended on its improvement, while its defences * and those of the Coleroon required constant care. Part of this outlay is no longer necessary, and it is manifestly just to contrast the former and the present cost of keeping up the river irrigation, and to charge against the annicuts the difference only, or the additional annual expense which has devolved upon the State in maintaining them, and their subsidiary works, in effective order. The subject has again undergone scrutiny and consideration, and the only change which appears necessary to be made in the former calculation is a reduction of the net profit yielded by the lower annicut in South Arcot from 98,726 to 90,000 rupees, an increase of revenue amounting to 10,000 rupees, which arose from the resumption of some cavil fees having been inadvertently included in the annicut gain, while some additional revenue in a few rented villages which was due to the annicut had been omitted, an explanatory memorandum drawn out on this part of the subject in the Board's Office, Department Public Works, forms Appendix (D.) to these proceedings.

22. But the Board have thought it advisable to make a new calculation of the profits of the annicuts, commencing with fusly 1240, A D 1830-31, and carrying it on to fusly 1263, or three years later than the period taken for comparison in the Board's printed memorandum. This course gives the result of the annicuts to the present time and as the revenue accounts entered in the printed memorandum commence with fusly 1240, when the river irrigated lands are first distinguished in the Tanjore accounts from the remaining Nunjah, it appears proper that the account of expenditure should commence from the same period The printed memorandum takes the outlay on the river irrigation from fusly 1236, or for 10 years before the annicuts, and it will be found that the result of that course is less favourable to the annicuts than the present one.

23. The expenditure under the head of "repairs" on the irrigation of the lands affected by the two annicuts during the six years which preceded their construction, is as follows .

	Upper Annicut *Rs*	Lower Annicut *Rs*
1831 - - - -	1,14,419 - - - -	2,695
1832 - - - -	1,12,134 - - - -	20,769
1833 - - - -	1,12,126 - - - -	23,820
1834 - - - -	1,20,698 - - - -	13,402
1835 - - - -	68,793 - - - -	18,514
1836 - - - -	79,719 - - - -	17,065
Average - -	*Rs* 1,01,327	*Rs.* 16,044

The expenditure on repairs in the subsequent years has been as follows —

	Upper Annicut. *Rs.*	Lower Annicut *Rs*
1837 - -	92,906 - -	8,096
1838 - -	1,06,446 - -	7,603
1839 - -	1,15,882 - -	16,810
1840 - -	88,632 - -	26,589
1841 - -	87,811 - -	53,371
1842 - -	1,04,446 - -	14,555
1843 - -	1,01,069 - -	8,446
1844 - -	1,05,582 - -	13,795
1845 - -	1,40,958 - -	10,293
1846 - -	95,309 - -	11,923
1847 - -	70,103 - -	9,131
1848 - -	95,710 - -	23,567
1849 - -	65,317 - -	21,532
1850 - -	1,42,298 - -	24,658
1851 - -	1,44,974 - -	23,494
1852 - -	1,64,275 - -	32,674
1853 - -	1,17,552 - -	26,633
Average - - - - - - - -	1,08,192	19,598
Deduct average of previous years - - -	1,01,327	16,044
Difference -	*Rs* 6,865	*Rs* 3,554

---

* The river embankments in Tanjore exceed 2,000 miles in length

The whole account then stands thus.

	Rs.	Rs
TANJORE.		
Annual gross increase since the annicut	1,77,952	
Deduct difference in cost of repairs	6,865	
		1,71,087
SOUTH ARCOT.		
Annual gross increase since the annicut	90,000	
Deduct difference in cost of repairs	3,554	
		86,446
Total net profit per annum - *Rs.*		2,57,533

The original cost of these works was as follows.

	Rs.
Upper annicut	83,401
Lower annicut	99,420
South Rajah Voikal	11,044
North Rajah Voikal	23,524
Total - *Rs.*	2,17,389

So that for an outlay of 2,17,389 rupees the Government have received a clear gain of 41,20,528 rupees in 16 years, or a profit of 118 per cent. per annum.

24 Having thus considered the three separate heads of the subject, the Board will offer a few general observations. They have been unable to concur with Colonel Cotton that the Mahramut expenditure made in Tanjore during a period of 50 years has increased the public revenues 20 lacs per annum, or that the Coleroon Annicuts have brought an additional annual revenue of 10 lacs since their construction in 1836 But they are nevertheless of opinion that the sums expended by Government in improving the irrigation and communications of the province have returned into the public treasury with profit both to Government and the people, though the precise extent of the general gain cannot be fixed, while the Coleroon annicuts are shown to have yielded a return of not less than 118 per cent. on the money expended in their construction. But this result of the annicuts, great and gratifying as it is, does not comprise all the truth. Losses of revenue have been prevented, besides an actual addition being made to the resources of Government, and the people have benefited by the increased poductiveness and value of their lands. The advantages which have thus arisen from the upper annicut demand in particular some notice.

Letter to Revenue Board, 11 August 1838, para. 12.

25. The principal purpose of this work was less to create new revenue than to restore a deteriorated irrigation, and its value to Government is often greatest when the revenue returns show a decline of revenue arising from adversities of season which the annicut is unable wholly to overcome. A cursory inspection of the annual revenue statements may therefore cause the advantages of the annicut to be undervalued, but it has been fully appreciated by the officers in charge of the province. Thus the principal Collector, Mr. Kindersley, when alluding to the disastrous year 1246, observes: "Without the annicut the failure of the crops must have been incalculably greater than it was. Indeed, from the very nature of the work, its operation is much more advantageous in a bad than in a good year, and I have not the slightest doubt that the saving it effected in fusly 1246, when it gave a full river but for 68 days, was much greater than the profit derived from it in 1247,* when the river was full for 122 days, Mr. Kindersley's successor, Sir H. Montgomery, gave similar testimony that the greatest benefit which Government derived from the annicut was in mitigating the effects of disastrous years, though then no increase was apparent in the gross amount of the land revenue (Letter to Board, 11th December 1840, para. 5).

26. In Tanjore the cultivation of the rice lands commences in July and August, with the aid of the irrigation furnished by the Cauvery, which flows from the

---

* In 1847, the culuvation of the river lands exceeded the average by 3,111 valies, of which the standard beriz was 1,06,730 rupees.

western coast, and is filled by the south-western monsoon; but there are no tanks or reservoirs to store up water in, and the crops have to depend for coming to maturity on the local rains of the north-east monsoon in October, November, and December The annicut cannot, therefore, prevent the crops withering when the latter monsoon fails, nor can it furnish irrigation to Tanjore when the Cauvery (speaking here of the river before the Coleroon separates from it) has not its usual supply. But the annicut has furnished such valuable aid by enabling cultivation to be commenced early in the season, and by furnishing irrigation during low freshes in the river, when formerly great distress was felt, that the remissions granted for withered crops have much decreased Omitting 1246 as an exceptional year,* unprecedented in its unfavourableness from the scantiness both of the river freshes and the north-east monsoon, the remissions granted for withered rice crops are as follows

	Total Remissions	Average per Annum
	Rs	*Rs*
In the six years before annicut, 1240 to 1245 - - -	8,43,706	1,40,617
In six years after annicut, 1247 to 1252 - - - -	3,69,302	61,550

27. Another test of the benefit conferred by the upper annicut, to which allusion will be made, is the value of Nunjah land at different periods. In a letter addressed to the Board on 29th January 1853, the Collector, Mr Bishop, observes —"Vast improvements have been made in the irrigation and drainage of the wet lands during many years; and although the ryots will not allow that much increase in the quantity of produce has attended these improvements, there can be no reasonable doubt of the fact." The statement prepared by Mr Forbes supports this fact by showing, that, according to sale deeds which passed through the collector's office, the average price of Nunjah land per valy was 82 rupees immediately before the construction of the annicuts, and that it has risen to 95, 107, 135, and 174 in the subsequent quinquennial periods The numerous sales and mortgages which occurred in the three years 1250, 1251, and 1252 (amounting to 13,831 valies, mortgaged or sold for 2,766,197 rupees), attracted attention in the review of the settlement for 1253, and led to a consideration whether any decrease in price or produce had affected the welfare of the Meerassidars; but as the sales were most frequent in Oolungoo villages, where the assessment falls with the price of grain, and the value of land was found to have risen, in the 20 years between 1233 and 1254, from 98 to 166 rupees in the field-assessed villages, and from 73 to 161 rupees in the Oolungoo villages, the Board argued that land was evidently in increased request, and that these sales could not have arisen from land having been forced into the market by the distress of its proprietors. An increasing† population, a Government which encourages and protects industry, and a regular revenue administration, must have had some influence upon the value of land; but the Board attributed the rise in its price principally to the improved irrigation conferred by the upper annicut, and Government expressed its concurrence in this view. The advantages conferred on Tanjore by this work received the following emphatic testimony from the principal Collector, Mr. Kindersley, shortly after its construction, and subsequent experience appears to the Board to confirm its justice:—"I cannot conclude without observing, that whilst doubt appears to be entertained of the advantages of the annicut elsewhere, there is not an individual in the province who does not consider it the greatest blessing that has ever been conferred upon it; and I have not the smallest doubt that the name of its projector will in Tanjore survive those of all Europeans who have ever been connected with it."

Provincial Collector to Board, 11th August 1833.

---

* The loss on account of drought in its settlement is 4,78,637 rupees

† The census returns gives the following results—Population, A D. 1819, 8,03,468, 1850, 16,76,086. And though the early account does not appear full and correct, there is no doubt that the population has greatly increased

28. While, therefore, the benefits of this work appear so great, a question arises how its usefulness could be undervalued by Mr. Smollett, at page 9, and in other parts of his pamphlet to which Government have directed the Board's attention; but the solution of this point is not difficult. Mr. Smollett's figures are found on examination to be correct, but they show merely the total land revenue demand without any details as to the extent of Nunjah cultivation, and the manner in which the price of grain has affected the revenue under the Oolungoo system, as explained in Appendix (C.). The years also which he selected in the first edition of his pamphlet to illustrate the result of the annicuts were open to objection, as not giving a fair comparison. Thus, at page 6, he details the 23 years shown in the margin,[*] of which 11 are before the annicut and 12 after. But the former series begins with two years when the ordinary land revenue was increased to the extent of no less than 7,15,614 rupees in 1823, and 13,69,390 rupees in 1824, by the accidental and temporary circumstance of prices being unprecedentedly high. After which, the three following years, when the revenue declined, were not given, though the omission has been supplied by Mr. Smollett in a second edition. The land revenue of these years stands as follows:—

1825 - - - - - -	*Rs.* 35,59.253
1826 - - - - - -	30,06,241
1827 - - - - - -	28,09,316

29. Mr. Smollett afterwards selects groups of years for two comparisons, but on both occasions the effect of price on the annual settlements is unnoticed. The first of these comparisons contrasts 11 years before the annicut (1823 to 1836 inclusive) with the 12 following years; but in the first period the accident of price brought a net addition to the standard or ordinary revenue of 13,63,668 rupees, while in the latter there was a net decrease of 96,591 rupees from the same cause, thus giving an accidental advantage of 1¼ lac per annum to the first period. So, with the next comparison of the five years immediately before and after the annicut, in the one case there was an addition of 5,56,766 rupees from the state of prices, and in the other a decrease of 3,73,240 rupees, thus putting the annicuts under a disadvantage of 9,30,006 rupees, or nearly 2 lacs per annum in the comparison by this cause. In illustration of this subject, the following details are given of the Nunjah cultivation during this period, and they will be found to confirm what has been already written of the improvement which is visible in its extent since the construction of the annicuts:—

TOTAL NUNJAH CULTIVATION in *Tanjore*.

YEARS.	Values.	Standard Beriz.	Actual Beriz, as influenced by Price.	Gain by Price.	Loss by Price.
	Rs.	*Rs.*	*Rs.*	*Rs.*	*Rs.*
1832 - - - -	92,038	29,89,687	31,20,057	1,30,370	—
1833 - - - -	90,078	29,70,636	32,39,164	2,68,538	—
1834 - - - -	92,937	29,47,627	29,62,464	14,835	—
1835 - - - -	92,212	27,99,459	27,90,896	- - -	8,563
1836 - - - -	88,068	28,39,774	29,91,360	1,51,586	—
Rs.	4,55,333	1,45,47,183	1,51,03,941	5,65,329	
				8,563	
Average - - *Rs.*	91,066	29,09,436	30,20,788	5,56,766	

	Rs.		*Rs.*		*Rs.*		*Rs*
[*] 1823 -	- 42,77,000	1832 -	- 37,96,000	1838 -	- 38,00,000	1844 -	- 38,30,000
1824 -	- 50,81,000	1833 -	- 39,21,000	1839 -	- 38,18,000	1845 -	- 42,50,000
1828 -	- 37,11,000	1834 -	- 36,40,000	1840 -	- 36,30,000	1846 -	- 42,20,000
1829 -	- 33,62,000	1835 -	- 34,67,000	1841 -	- 34,00,000	1847 -	- 39,16,000
1830 -	- 34,18,000	1836 -	- 36,77,000	1842 -	- 36,28,000	1848 -	- 37,64,000
1831 -	- 35,17,000	1837 -	- 37,05,000	1843 -	- 37,79,000		

Total Nunjah Cultivation in *Tanjore*—continued.

YEARS.	Valies.	Standard Beriz	Actual Beriz, as influenced by Price.	Gain by Price.	Loss by Price.
	Rs	*Rs.*	*Rs.*	*Rs.*	*Rs.*
1837 - - -	94,103	30,08,390	30,12,320	3,930	—
1838 - -	94,845	30,65,448	31,05,019	39,571	—
1839 - -	95,783	30,89,910	31,13,620	23,710	—
1840 - -	96,712	30,55,180	29,30,837	- - -	1,24,343
1841 - - -	98,571	30,26,697	27,10,589	- - -	3,16,108
Rs.	4,79,514	1,52,45,625	1,48,72,385	67,211	4,40,451
					67,211
Average - - *Rs*	95,903	30,49,125	29,74,477	- - -	3,73,240

30. Although, therefore, Mr. Smollett has successfully shown that Colonel Cotton has over-estimated the profits of the general Maramut expenditure in Tanjore, as well as of the Coleroon Annicuts, there is nothing in his pamphlet to disprove the facts that the land revenue in Tanjore has shown considerable improvement under our rule, though subject to fluctuations from the effects of price on its peculiar system of taxation, and that the operation of the Coleroon Annicuts has given to Government an actual increase of revenue, amounting to 1,77,952 rupees per annum, exclusive of the gain in South Arcot through an extended Nunjah cultivation, besides making the irrigation of the province more secure, and thus adding to the value of its lands. If there had been no variation in the rates of assessment from the effects of price under the Oolungoo system, the land revenue of Tanjore, according to the cultivation returns, would have shown the result entered in the margin;* and it thus appears how the doubts which have arisen regarding the benefit of the annicuts and the general expenditure on irrigation improvements are mainly attributable to this cause. To illustrate the extensive fluctuations of revenue which occur under the Oolongoo system, the result of the two following years is contrasted:

——	Total Land Cultivated Valies.	Beriz.
	Rs.	*Rs.*
1234 - - -	1,10,799	50,76,783
1237 - - -	1,15,366	28,09,313

Thus in the latter year the revenue fell off 22 lacs, although cultivation had increased 4 per cent. This enormous difference was chiefly owing to fluctuations of price, which, from a scarcity elsewhere, rose so high in 1234 as to add 13,62,390 rupees to the standard Beriz, while lowness of price in 1237 caused a decline of 4,30,582 rupees below the standard.

31. In

---

* Before Annicut:
Average from 1235 to 1239: *Rs.* 33,79,036. - - Average from 1240 to 1244. *Rs.* 35,79,356.

After Annicut ·	*Rs.*		*Rs.*		*Rs.*
1246 - -	35,26,118	1251 - -	37,21,334	1257 - -	39,20,973
(an unusually bad season).		1252 - -	37,57,122	1258 - -	39,17,035
1247 - -	37,01,229	1253 - -	37,78,872	1259 - -	39,55,874
1248 - -	37,63,795	1254 - -	38,17,777	1260 - -	39,62,483
1249 - -	37,94,545	1255 - -	39,45,991	1261 - -	39,53,137
1250 - -	37,56,178	1256 - -	39,85,388	1262 - -	39,89,819.

31. In the instructions of Government, dated 7th December last, which referred to the Godavery and Kistnah, as well as the Coleroon Annicuts, the Board were directed to communicate their views to Mr. Smollett "for any further observations he may have to offer," before submitting them to Government. But as the Board's investigation has been since limited to the Coleroon Annicuts, and their report has been called for at their "earliest possible convenience," they have doubted whether Government would now desire that delay should occur by sending the papers in the first instance to that gentleman, especially since in the case of the Coleroon Annicuts the question is limited to the effect which those works have actually had on the public revenue. The point at issue is this one fact, to be determined by the cultivation and revenue accounts of the province and its treasury receipts, while with respect to the Kistnah and Godavery Annicuts there are other unsettled points to investigate on which differences of opinion may prevail, such as the amount of the additional assessment, which might suitably be placed on the lands newly brought under irrigation, the total irrigable area, the future additional revenue which may be expected, and the amount which would have been hitherto realised if a charge had been made for the water already supplied. The Board have therefore deemed it proper to send these proceedings direct to Government, returning with them the Tanjore statements which accompanied Extract from Minutes of Consultation, dated 7th December last.

(A true extract.)

To T. Pycroft, Esq.,
Chief Secretary to Government.

B. Cunliffe, Secretary.

APPENDIX (A.)

ABSTRACT STATEMENT of the LAND and EXTRA REVENUES of *Tanjore*, from 1800 to 1852

A. D.	Fusly.	Land Revenue	Extra Sources.	TOTAL.	REMARKS.
		Rs	*Rs.*	*Rs.*	
1800	1210	44,07,434	2,58,630	46,66,064	In 1200 the land revenue was increased one-fifth by an extra portion of the gross produce being taken.
1801	1211	31,27,714	1,54,755	32,82,469	
1802	1212	26,63,257	1,14,045	27,77,302	
1803	1213	23,58,761	1,04,268	24,63,029	
1804	1214	33,31,028	1,83,540	35,14,568	
Average - -		31,77,639	1,63,047	33,40,686	
1805	1215	31,00,301	2,65,148	33,65,449	In 1215 the salt monopoly was introduced *See* Regulation I. of 1805.
1806	1216	28,17,137	1,58,966	29,76,103	
1807	1217	35,55,624	2,14,333	37,69,957	
1808	1218	35,95,146	3,77,511	39,72,657	The Abkarry and Stamp Revenues were formally established by Regulations I and IV. of 1808.
1809	1219	33,18,364	5,12,709	38,31,073	
Average - -		32,77,314	3,05,733	35,83,047	
1810	1220	30,30,622	5,56,807	35,87,429	
1811	1221	30,33,940	5,08,075	35,42,015	
1812	1222	32,74,271	5,41,720	38,16,000	The Land Customs were modelled by Regulation I. of 1812.
1813	1223	34,76,320	6,26,130	41,02,450	
1814	1224	34,22,813	6,52,580	40,75,393	
Average - -		32,47,592	5,77,064	38,24,657	
1815	1225	32,89,967	6,61,966	39,51,933	
1816	1226	33,30,403	6,54,664	39,85,067	
1817	1227	32,56,039	6,48,434	39,04,473	
1818	1228	30,97,520	7,01,053	37,98,573	
1819	1229	31,01,711	7,47,405	38,49,116	
Average - -		32,15,128	6,82,704	38,97,832	

A. D.	Fusly.	Land Revenue	Extra Sources	TOTAL	REMARKS
		Rs.	*Rs.*	*Rs.*	
1820	1230	31,66,357	9,09,765	40,76,122	
1821	1231	30,64,839	8,64,925	39,29,764	
1822	1232	32,90,481	8,33,466	41,23,947	The Oolungoo system was introduced into villages by the principal Collector, Mr. Cotton.
1823	1233	43,08,707	8,92,004	52,00,711	
1824	1234	49,63,433	9,19,716	58,83,149	
Average - -		37,58,763	8,83,975	46,42,738	
1825	1235	35,89,050	8,92,235	44,51,285	
1826	1236	30,04,393	8,80,258	38,84,651	
1827	1237	28,07,213	9,13,900	37,21,113	
1828	1238	36,88,330	10,73,467	47,61,797	
1829	1239	33,21,668	10,56,903	43,78,571	
Average - -		32,76,131	9,63,353	42,39,484	
1830	1240	33,87,506	9,51,752	43,39,258	
1831	1241	34,92,161	9,18,986	44,11,147	
1832	1242	37,77,089	8,92,969	46,70,058	
1833	1243	38,86,967	9,55,141	48,42,108	
1834	1244	36,27,011	9,66,212	45,93,223	
Average - -		36,34,147	9,37,012	45,74,159	
1835	1245	34,42,207	10,01,325	44,43,532	
1836	1246	36,60,566	9,67,101	46,27,667	
1837	1247	36,89,861	9,62,084	46,51,945	
1838	1248	37,88,509	10,22,368	48,10,877	
1839	1249	38,03,006	10,24,456	48,27,462	
Average - -		36,76,830	9,95,467	46,72,297	
1840	1250	36,15,551	10,05,551	46,21,102	
1841	1251	33,88,374	10,05,066	43,93,440	
1842	1252	36,09,393	10,00,209	46,09,602	
1843	1253	37,58,942	9,31,704	46,90,646	
1844	1254	38,12,575	8,42,055	46,54,630	The Land Customs were abolished by Act VI of 1844, the Sea Custom Duties and Monopoly price of Salt being at the same time enhanced
Average - -		36,36,907	9,56,917	45,93,884	
1845	1255	42,44,277	8,57,037	51,01,314	
1846	1256	42,23,812	9,21,593	51,45,405	
1847	1257	39,11,819	9,12,594	48,24,413	
1848	1258	37,55,985	8,74,285	46,30,270	
1849	1259	38,64,907	9,31,366	47,96,273	
Average - -		40,00,160	8,99,375	48,99 530	
1850	1260	39,03,575	9,91,567	48,95,142	
1851	1261	39,07,644	10,11,859	49,19,503	
1852	1262	38,20,039	9,41,375	47,70,414	The Land Revenue of Fusly 1262 was increased 1,79,394 rupees by some Brahmin and Pagoda Maumems being included in it
Average - -		38,80,086	9,81,600	48,61,686	
Average of 48 Years, on Fusly 1215 to 1262		35,46,988	8,11,516	43,58,504	

B. Cunliffe,
Secretary.

Revenue Board Office, Fort Saint George,
21 May 1855

APPENDIX (B.).

STATEMENT of MARAMUT EXPENDITURE in *Tanjore*.

Years.	Expenditure on Irrigation Works.	Expenditure on Roads and Bridges.	Total Government Expenditure.	REMARKS.
1800 - - -	- - -	- - -	- - -	The expenditure from 1800 to 1829 has been taken from the Collector's statement, and its details will be found in Enclosure 1, in 1 of 4670 of 1854, received from Government. As the expenditure is not shown under distinct heads before 1815, it is assumed that three-fourths of it was on irrigation and one-fourth on other works.
1801 - - -	- - -	- - -	1,68,177	
1802 - - -	- - -	- -	1,29,547	
1803 - - -	- - -	- - -	1,09,858	
1804 - - -	- - -	- - -	86,643	
1805 - - -	- - -	- - -	1,09,856	
1806 - - -	- - -	- - -	1,17,950	
1807 - - -	- - -	- - -	75,195	
1808 - - -	10,36,113	3,45,370	38,376	
1809 - - -	- - -	- - -	32,335	
1810 - - -	- - -	- - -	88,402	
1811 - - -	- - -	- - -	55,257	
1812 - - -	- - -	- - -	90,013	
1813 - - -	- - -	- - -	1,02,510	
1814 - - -	- - -	- - -	74,000	
1815 - - -	- - -	- - -	1,03,358	
1816 - - -	77,161	30,587	1,07,748	
1817 - - -	45,539	15,941	61,480	
1818 - - -	77,674	16,234	93,908	
1819 - - -	1,30,896	24,963	1,55,859	
1820 - - -	50,809	10,351	61,160	
1821 - - -	52,512	10,511	63,023	
1822 - - -	54,206	8,772	62,978	
1823 - - -	66,376	4,925	71,301	
1824 - - -	57,903	3,155	61,058	
1825 - - -	59,196	4,908	64,104	
1826 - - -	32,983	17,751	50,734	
1827 - - -	25,268	7,526	32,794	
1828 - - -	28,636	3,586	32,222	
1829 - - -	32,880	4,247	37,127	
1830 - - -	97,725	9,775	1,07,500	The expenditure since 1830 has been taken from the bills sanctioned in the office of the Board of Revenue, Department of Public Works
1831 - - -	1,14,419	9,554	1,23,973	
1832 - - -	1,12,134	1,202	1,13,336	
1833 - - -	1,12,196	7,893	1,20,089	
1834 - - -	1,20,698	342	1,21,040	
1835 - - -	68,793	3,761	72,554	
1836 - - -	1,63,120	4,136	1,67,256	
1837 - - -	92,906	22,267	1,15,173	
1838 - - -	1,06,446	11,331	1,17,777	
1839 - - -	1,15,883	26,937	1,42,820	
1840 - - -	88,632	1,010	89,642	
1841 - - -	87,811	2,236	90,047	
1842 - - -	1,04,446	8,196	1,12,642	
1843 - - -	1,01,070	2,090	1,03,160	
1844 - - -	1,05,582	3,094	1,08,676	
1845 - - -	1,40,958	9,926	1,50,884	
1846 - - -	95,309	14,094	1,09,403	
1847 - - -	70,103	13,617	83,720	
1848 - - -	95,710	18,185	1,13,895	
1849 - - -	65,317	12,280	77,597	
1850 - - -	94,546	3,518	98,064	
1851 - - -	1,25,826	13,434	1,39,260	
1852 - - -	1,97,726	6,711	2,04,437	
	43,05,508	7,14,416	50,19,924	
Surplus Pagoda funds; add expenditure from between 1830 and 1852 - - -	- - -	2,00,665	—	
Grand Total - *Rs.*	43,05,508	9,15,081	52,20,589	

B. Cunliffe,
Secretary.

Revenue Board Office, Fort St. George,
21 May 1855.

APPENDIX (C)

1. THE manner in which the Land Revenue in Tanjore fluctuates with the price of grain is alluded to in the first Report of the Public Works Commissioners, para. 254, and it seems proper here to give a brief explanation of the Oolungoo system.

2 In the villages settled on this principle a standard was fixed in fusly 1232, by ascertaining the extent of nunjah land cultivated, and its gross produce during a series of years The Government portion of this produce (mulwarum) was converted into money at an ascertained average price, and the amount divided by the number of valies taken, as the standard cultivation of the village formed the rate of assessment per valy

3 Thus (to suppose an imaginary instance) the standard cultivation of a village is 10 valies, and the standard produce 1,500 cullums. Deducting 176 for the fees of the village officers and other items (sotruntrums), the remaining produce, 1,324 cullums, is divided between the landholders and the Government. The share of the latter, 662 cullums, at the local standard price which was fixed on the average of several preceding years, becomes *Rs.* 317 3 4, and this divided by 10, the number of valies forming the standard cultivation of the village, gives *Rs* 31. 11 6* per valy, which is accordingly the village rate of assessment, and the landholders are answerable for this amount of revenue in ordinary years, paying extra for any land which is cultivated in excess of the standard But to secure the landowners from loss, two rules were established 1st If the price of grain falls below the standard, more than five per cent remission is made for all such excess, while if price rises, the ryot is allowed the benefit as far as 10 per cent, after which a proportionate increase is made to the assessment. 2d. If the produce falls off to the extent of 30 per cent and upwards, either from a limited cultivation or indifferent crops, the ryots can demand that they be reaped and sold by Government, and the proceeds be divided, instead of the ordinary assessment being levied.

4 The total number of ain or Government villages in Tanjore is 4,854, of which 2 847 are under Oolungoo settlement.

5 As Tanjore, from its advantages of irrigation, is a granary of supply when scarcity prevails elsewhere, great fluctuations of price have occurred in it, and their effect on its land revenue is enormous, as shown in the following instance —

Fusly.	Wet Cultivation, Valies	Dry ditto.	Total Cultivation	Beriz Rs
1234	81,845	28,954	1,10,799	50,76,783
1237	85,631	29,705	1,15,366	28,09,316

6 Thus, although in the latter years there was an increase of four per cent in the cultivation, the Government revenue fell off to the extent of 22,67,467 rupees, or 44 per cent The portion of the above great difference which is attributable to charges of price in the Oolungoo villages, is as follows —

Gain to Government by price in fusly 1234	13,69,390
Loss to Government by price in fusly 1237	4,30,582
	17,99,972

According to the state of prices in these two years, the standard assessment of *Rs* 31 11 6 per valy in the village alluded to in this draft, would have risen to *Rs*. 54. 0 10 in fusly 1234. and sunk to *R* 25. 13. 2 in fusly 1237

(signed) *B Cunliffe*,
Secretary

Revenue Board Office, Fort St. George,
21 May 1855.

APPENDIX (D)

MEMORANDUM on the Returns from the Upper and Lower *Coleroon* Annicuts.

1 WHEN the Public Works Commission was sitting, the Collectors forwarded to that body complete returns of the results of the special works of irrigation, and from these, together with other authentic documents already in the office of the Board of Revenue Department of Public Works, the printed statement, dated 14th May 1852, was compiled As it is an extract from this statement that has drawn forth the doubts of the Court of Directors touching the reality of the alleged profits from the Upper Annicut, it is necessary now to justify the document.

See Despatch, dated 28th June 1854, para. 38, Copy of which was forwarded to Board of Revenue Department, Public Works, with Extract from Minutes Consultation, dated 10th October 1854

---

* This is about the average of the nunjah assessment in Tanjore.

2. The Collector of Tanjore, in answer to a request from the Board for his opinion upon the statement, informs them that he has nothing to add to the reports of Mr. Bishop

Letter dated 6th February 1855

3. The Collector of South Arcot has sent in a fresh statement, and in his letter forwarding it, he observes, that the original cost of the Lower Annicut appears to be erroneously entered in the printed statement at 74,234 rupees, as it really cost 2,46,549 rupees. This sum, however, is the expenditure from 1836 to 1852 on "the Lower Annicut and its dependencies," while the amount entered in the printed statement is the moiety of the "original" cost of the annicut added to the full cost of the works in immediate dependence upon it in the South Arcot district; the other moiety, with its dependent works, being charged to Tanjore, under the head of South Rajah Voykal. The Collector's statement, consequently, does not show any error in the printed documents; but allowance, it appears, must be made for a sum of 10,000 rupees annually from fusly 1252 (1842-43) to 1262 (1852-53) incorrectly entered in the former returns from the collectorate as profit from the annicut, or to fusly 1260 (1850-51), which is the last included in the printed statement.

4. The following extract from the printed statement explains the principle upon which the returns are calculated:—

"The results of the annicut are thus ascertained:

"The prime cost is first entered in column 3.

"The average annual expenditure for the whole of the irrigation works in the district (exclusive of those under the Lower Annicut and inclusive of repairs rendered necessary by the annicut in Trichinopoly) for the period after, and the same for 10 years before the construction of the annicut being then ascertained, and the latter average being deducted from the former, the difference is multiplied by the number of years composing the period in question, that is, by 15 (from 1836 to 1850), and the product deducted from the aggregate increase of revenue during the same period; the remainder being the net profit, which is again divided by 15, and the quotient is the average annual profit on the prime cost.

"This is the only practicable way of showing the true value of the annicut; since, were the different improvements subsequent to that work considered as so many separate bases of calculation, the only effect would be extreme complication without any more satisfactory result. By the method actually followed, the entire expenditure is brought to account, but all as subsidiary (which it really was) to the Upper Annicut.

"The results in this case are shown at a less amount than the fair reality, owing to the comparison of expenditure having included 10 years before the construction of the annicut. But as the average revenue in column 5 is reckoned from fusly 1240 (1830-31), the first in which the nunjah cultivation and revenue under the rivers are separately shown, it would have been more proper, strictly speaking, to reckon the average expenditure before the construction of the annicut from that, and not, as it has been, from an earlier year, since the calculation of the revenue, had it been practicable, from the same earlier year would have altered the average in column 5. Had this course been followed, the gain from the annicut would, as above said, have appeared much greater; for the expenditure from 1240 (1830-31) to 1245 (1835-36), averaged 1,04,166 rupees, instead of 77,717, the average from 1236 (1826-27), to 1245 (1835-36) actually taken; the former average being in fact greater than that of the whole outlay for repairs and new works (including great improvements to the annicut, the Cauvery Dam, the Coiladdy Calingulah, the Cauvery and Vennar Dam (in part), and other considerable improvements, but excluding the Lower Annicut repairs charged under Nos. 18 and 23), subsequent to the construction of the annicut, which was 95,876.

"If, therefore, the six years average from 1240 (1830-31) to 1245 (1835-36), were taken as the basis, the difference between it and the average since the construction of the annicut, that is, 1,04,166 — 95,876 — 8,290, which × 15 = 1,24,350, should be added to the increase of revenue in column 10, and the total gain would then be 22,07,260, which, divided by 15 would give the annual gain at 1,47,151, or 176¾ per cent. on the prime cost. If it were not added, the average annual gain would be 1,38,861, or 166¾ per cent. on the prime cost.

"It is, indeed, a memorable truth, that the condition of things before the annicut required a greater annual expenditure in imperfect and mostly temporary expedients to preserve the cultivation and revenue, than what has since been incurred to bring under cultivation an additional area of 61,262 acres (exclusive of the increase under the South Rajah Voykal), besides greatly increasing the productiveness of the old lands.

"The whole of the Tanjore expenditure and revenue under the rivers is entered in Nos. 22 and 23, except a moiety of the repairs of the Lower Annicut entered in No. 18"

5. The accompanying Appendix further shows the particulars of the entries, and is explained as follows:—

TANJORE.—Upper Annicut.

6. Item No. 1, 1,77,851 rupees, is the average outlay for irrigation works in Tanjore for 10 years before the construction of the annicuts.

Item No. 2, 1,740 rupees, is the proportion of this expenditure belonging to the lands under the Lower Annicut, which is separately treated of, and it is therefore deducted from No. 1, and the remainder is No. 3, [illegible] rupees.

7 No 4, 1,614 rupees, is composed of the average expenditure for the same period in the Trichinopoly district (in which the annicut is situated). on the river banks in the vicinity of the annicut, which exercises a material influence on such expenditure. Added to the foregoing remainder, this item makes No. 5, 77,717 rupees.

8. Nos. 6 and 10, 1,04,328 and 1,04,166 rupees, show the same particulars for the six last years only of the 10 years' period, are entered as explained in the extract, to correspond with the revenue returns which are given for six years, and not for 10 years

9 The same particulars are then given in items Nos 11 and 15, 99,595 and 99,578 rupees, for the period of 15 years after the construction of the annicut

10 No 5 being then deducted from No 15, the remainder 21,861 rupees, No 16, shows the average annual excess of expenditure during the 15 over the 10 years' period, and this item, multiplied by 15, gives the whole excess for the 15 years, namely, 3,27,915 rupees, No 17 From this amount the expenditure under the Lower Annicut, which was included in the bills, namely, 55,534 rupees, No 18, is deducted, and the remainder, No. 19, namely, 2,72,381 rupees, appears in column 12 of the printed statement

11 The next four items, 1,04,166 rupees, at 124,350 show a similar comparison of the six with the 15 years' period, and in this it appears that the average for the second is less than for the first period, and consequently that there has been a reduction of expenditure since the construction of the annicut. These items are not however tabulated in the printed statement.

Lower Annicut, or in Printed Statement, *South Rajah Vaykal*

12. The entry in column 3 of the printed statement is the moiety of the original cost of the Lower Annicut proper, added to that of the dependent works on the right bank, or Tanjore side.

Moiety of annicut - - - - - - - - -	49,710
Other works - - - - - - - - - -	11,044
Entry in Statement - - - - - - - -	60,754

13 The items that follow in the Appendix to this Memo are sufficiently explained by the foregoing remarks, but it should be added, that the amount, 3,722 rupees, appears to be an error for 3,702 rupees, and that the result should consequently be 66,044 rupees instead of 66,124, but this is not of the least importance to the general result

SOUTH ARCOT —*Lower Annicut*

14 The bill for the Lower Annicut, sluices, lock, and North Rajah Voykal, amounts to 1,29,046 rupees, or deducting the Rajah Voykal and another trifling work, to 1,07,910 rupees Deducting from this amount again items belonging to the sluices and lock, the remainder is 99,487 rupees The moiety of this sum is 49,744, but the amount entered is 49,710 rupees, through some error, which for want of access to all the papers cannot now be explained, and is of not the least consequence to the result To this the cost of the North Rajah Voykal, and of the sluices, but not of the lock, which has nothing to do with the irrigation, is added, and the total, 74,234 rupees, appears in column 3 of the printed statement

15 The entries under this head in the Appendix are similar (*mutatis mutandis*) to those in Tanjore, and the last item, 39,972 rupees, appears in column 12 of the printed statement

It only remains to deduct from the aggregate revenue of the 14 years in column 8, namely, 14,22,971 rupees, 90,000 rupees for the amount incorrectly credited as increase of revenue from fusly 1252 (1842-43), to 1260 (1850-51)

16 This will reduce the amount in column 13 to 12,92,999, the average annual increase in column 15 to 92,357, and the annual per-centage in column 17 to $124\frac{1}{8}$.

17 The large per-centages realised upon the capital invested in the Coleroon Annicuts appear to have excited surprise; but they are in fact by no means extraordinary in connexion with the circumstances of the Cauvery Delta at the time of the construction of these works It must not be forgotten, that the delta had been for an unknown period of time the field of a most extensive system of irrigation, rendering it by far the richest territory, area for area, in South India But its prosperity was placed in jeopardy by the difficulty of utilising the entire supply of water brought down by the river. and that difficulty was simply, effectually. and at trifling cost removed by the annicuts. The source of all the wealth of the delta is the river, the annicuts are only conditions essential to the transmission of the water to the lands; and as other conditions not less essential and of far greater magnitude were in active operation before the annicuts, it must never be supposed, that where such conditions are wanting, works similar to the annicuts would produce anything approaching to similar results for a length of time In the Godavery Delta. for example, besides the annicuts, the entire system of irrigation had to be created, and the profits on the capital expenditure will necessarily be at first diminished in proportion to the extent

of the subsidiary works required for their realization. But these profits will evidently by degrees far surpass in actual amount those realised in Tanjore, on account of the far greater field for improvement afforded by the Godavery Delta.

18. It should be added that the falling off of the Tanjore revenue for three years of the 15 years' period, was owing to the low price of grain, which largely affects the revenue in that district. The increase in produce, the true criterion of the works of irrigation, was steady throughout the period.

(signed) *J. H. Bell*,
Secretary Board of Revenue, D. P. W.

Madras, 30 April 1855.

APPENDIX.

TANJORE.—*Upper Annicut.*

Average expenditure ordinary, occasional and emergent, upon the Tanjore Irrigation Works, from 1826 to 1835, 10 years - - - - -	No. 1	77,351
Deduct average for the lands under the Lower Annicut - -	No. 2	1,248
	No. 3	76,103
Add average expenditure in Trichinopoly, for the Cauvery and Coleroon banks, between the site of the Upper Annicut and Trichinopoly -	No. 4	1,614
	No. 5	77,717
Average expenditure as above from 1830 to 1835, that is, for the same period as that from which the average revenue is derived, six years	No. 6	1,04,328
Deduct average under Lower Annicut as before - - - - -	No. 7	1, 248
	No. 8	1,03,080
Add average for the same period in Trichinopoly - - - - -	No. 9	1,086
	No. 10	1,04,166
Average expenditure as above, from 1836 to 1850, 15 years - -	No. 11	99,595
Deduct average for the same period under Lower Annicut - -	No. 12	3,722
	No. 13	95,873
Add average for the same period in Trichinopoly - - - - -	No. 14	3,705
	No. 15	99,578
Deduct former average of 10 years - - - - - - - -	No. 5	77,717
	No. 16	21,861
	No. of years	15
	No. 17	3,27,915
Deduct repair of Lower Annicut - - - - - - - - -	No. 18	55,534
Expenditure of the 15 years - - - - - - - - - -	No. 19	2,72,381
Average for the six years' period, as above - - - - - - -		1,04,166
Deduct average for the 15 years' period, as above - - - -	99,578	
Deduct average of expenditure on Lower Annicut, $\frac{55,534}{15}$ 3,702 - - -		95,876
		8,290
		15
Reduction of the expenditure for the 15 years - - - - - - -		1,24.350

Lower Annicut.

Average annual expenditure before the construction of the annicut on the works now under its influence - - - - - - - - -	1,248
Average annual expenditure since the construction of the annicut - -	3,722
	2,474
No. of years - - -	14
	34,636
Add moiety of repairs and improvements to annicut - - - - - -	31,488
	66,124

South Arcot.—*Lower Annicut.*

Average annual expenditure before the construction of the annicut, on the works of irrigation now under its influence - - - - - -	17,150
Average annual expenditure of the 14 years, since the construction of the annicut - - - - - - - - - - - -	17,756
	606
No. of years - - -	14
	8,884
Add moiety of cost of repairs and improvements to Annicut - - -	31,488
Cost of repair for 14 years - - - - - - - - -	39,972

STATEMENT of Tanjore Irrigation Expenditure from the Year 1826 to 1850 inclusive, from the Bills in this Office.

YEARS.	Amount, including Ordinary, Occasional, and Emergent, &c			Ten Years' Average.	Six Years' Average	Fifteen Years' Average
1826 - - - -	37,637	12	10	77,351		
1827 - - - -	29,364	4	9			
1828 - - - -	37,251	9	11			
1829 - - - -	43,291	4	–			
1830 - - - -	97,724	15	10		1,04,328	
1831 - - - -	1,14,419	6	6			
1832 - - -	1,12,133	14	–			
1833 - - - -	1,12,196	3	–			
1834 - - - -	1,20,697	15	4			
1835 - - - -	68,793	4	–			
1836 - - - -	79,719	2	–	Not including cost of annicut		99,595
1837 - - - -	92,905	12	–	- - -	- - -	
1838 - - - -	1,06,445	12	4	- - -	- - -	
1839 - - - -	1,15,882	7	6	- - -	- - -	
1840 - - - -	88,632	6	–	- - -	- - -	
1841 - - - -	87,810	12	8	- - -	- - -	
1842 - - - -	4,04,445	12	9	- - -	- - -	
1843 - - - -	1,01,069	13	11	- - -	- - -	
1844 - - - -	1,05,582	1	–	- - -	- - -	
1845 - - - -	1,40,958	8	2	- - -	- - -	
1846 - - - -	95,308	14	6	- - -	- - -	
1847 - - - -	70,103	4	8	- - -	- - -	
1848 - - - -	95,709	9	–	- - -	- - -	
1849 - - - -	65,316	11	10	- - -	- - -	
1850 - - - -	1,44,053	–	–	- - -	- - -	

STATEMENT of IRRIGATION EXPENDITURE in Talooks of *Munnargoody* and *Chellumbrum*, in *South Arcot*, from 1826 to 1850.

YEARS.	EXPENDITURE.	Eleven Years' Average.	Fourteen Years' Average.
1826 - - - - -	20,836 7 –	17,150	
1827 - - - - -	53,342 7 –		
1828 - - - - -	9,933 2 –		
1829 - - - - -	5,397 14 –		
1830 - - - - -	2,874 14 4		
1831 - - - - -	2,694 14 7		
1832 - - - - -	20,768 15 10		
1833 - - - - -	23,819 12 –		
1834 - - - - -	13,402 2 –		
1835 - - - - -	18,514 1 6		
1836 - - - - -	17,065 14 9		
1837 - - - - -	8,096 15 7	- - - -	17,756
1838 - - - - -	7,603 4 6	- - - -	
1839 - - - - -	16,810 7 10	- - - -	
1840 - - - - -	26,588 8 5	- - - -	
1841 - - - - -	53,371 5 6	- - - -	
1842 - - - - -	14,555 3 9	- - - -	
1843 - - - - -	8,445 13 6	- - - -	
1844 - - - - -	13,795 7 8	- - - -	
1845 - - - - -	10,293 4 3	- - - -	
1846 - - - - -	11,923 5 4	- - - -	
1847 - - - - -	9,131 7 9	- - - -	
1848 - - - - -	23,566 13 8	- - - -	
1849 - - - - -	21,532 3 10	- - - -	
1850 - - - - -	22,874 4 11	- - - -	

(signed) *J. H Bell,*
Secy. Board of Revenue, D. P. W.

From *Arthur Hall,* Esq, Collector of South Arcot, to Captain *J. H Bell,* Secretary to the Board of Revenue, Department of Public Works, Fort St. George.

Sir,

WITH reference to Extract from the Proceedings of the Board of Revenue, Department of Public Works, dated 4th December 1854, relative to the effects of the Colcroon annicuts upon the revenues of Tanjore and South Arcot, I do myself the honour to submit a statement, showing what may, I think, be fairly considered as the result of constructing the lower one of the two, as far as the increase of revenue derived from it in this district, is concerned.

2. It appears to me that the original cost of this annicut and its dependencies is erroneously entered in the statement referred to by the Board as 74,234. It really cost 2,46,549, according to the bills submitted and passed at different times.

3 Ten thousand rupees should also have been deducted from the sum specified as the increase of revenue after fusly 1252, in the statement which was forwarded from this office to the Public Works Commissioners, as this amount of increase arose from another cause than the effect of the annicut. It proceeded from the resumption by Government of certain Cavilgar enams, which had been deducted from the beriz of the land irrigated by the annicut, and which had never, up to fusly 1252, been brought into our accounts.

4 The Board will thus observe, that after deducting the cost of the repairs, the net gain accruing from the construction of this annicut from 1836 to 1852 (inclusive), has been 13,74,051 rupees, being an average annual profit of 85,878 rupees, or a per-centage of $34\frac{3}{16}$ on the original outlay, viewing the building itself as the capital.

5 In my opinion, the foregoing is the increase of revenue which may be fairly attributed to the effect of the Lower Annicut in this district, and I do not consider that any other causes have contributed to make it.

I have, &c
(signed) *A. Hall,*
Collector.

South Arcot,
Collector's Circuit Cutchery, Oolundoorpett,
6 February 1855

STATEMENT showing the PROFIT which has resulted in the District of *South Arcot*, from the Lower *Coleroon* Annicut, for Sixteen Years subsequent to its Construction, as compared with the same Period previous to its being built.

No.	NAME of the WORK.	Original Cost of the Lower Annicut and its Dependencies		Gross Cultivation and Revenue from the Land for Sixteen years previous to its Construction.			Gross Cultivation and Revenue for Sixteen years subsequent to its Construction.			Gross Increase of Cultivation and Revenue from the Annicut.		Gross Amount of Repairs to the Annicut and its Dependencies.	Net Increase of Revenue, deducting Cost of Repairs.	Average Annual Net Increase of Revenue	Per-Centage Profit on the original Outlay	REMARKS.
				Fusly	Extent	Revenue	Fusly	Extent.	Revenue.	Extent	Revenue.					
1.	2	3.		4	5.	6	7	8.	9.	10	11.	12.	13.	14	15	
		A. D.	*Rs*		*Cawny.*	*Rs.*		* *Cawny*	*Rs.*	*Cawny*						
		1836	1,29,050													As the annicut has been since 1838 under the Tanjore authorities, the cost of repairs subsequent to that year made to the annicut itself, is not to be found in the records of this office Many villages in the Tanjore country are watered by this annicut, the benefit thereof should be explained by the Collector of that district.
		1837	7,248	1231	13,416	1,31,963	1247	22,798	2,30,319	—	—	—	—	—	—	
		1838	2,419	1232	18,498	1,60,093	1248	24,662	2,52,975	—	—	—	—	—	—	
		1839	13,564	1233	13,651	1,38,016	1249	25,299	2,66,333	—	—	—	—	—	—	
		1840	10,770	1234	15,849	1,57,418	1250	24,518	2,58,631	—	—	—	—	—	—	
		1841	47,566	1235	17,053	1,70,083	1251	18,862	2,02,815	—	—	—	—	—	—	
			81,597	- -	78,467	7,77,573	- -	* 1,16,139	12,11,073	37,672	4,33,500	26,727	4,06,773	81,354	38⅝	
1	Lower Annicut and dependent works - -	1842	7,279	1236	16,391	1,60,714	1252	14,989	1,61,587	—	—	—	—	—	—	Certain resumed cavilgar's enam taken at 10,000 rupees per annum, are deducted from the gross cultivation and revenue, from fusly 1252 to 1262
		1843	843	1237	12,597	1,18,763	1253	17 434	1,91,428	—	—	—	—	—	—	
		1844	5,193	1238	* 11,914	1,09,332	1254	18,944	2,11,959	—	—	—	—	—	—	
		1845	- - -	1239	14,203	1,19,366	1255	20,585	2,35,290	—	—	—	—	—	—	
		1846	3,661	1240	9,739	57,404	1256	25,452	2,93,758	—	—	—	—	—	—	
			16,976	- -	64,841	5,95,579	- -	97,404	10,94,022	32,563	4,98,443	34,006	4,64,437	92,687	40 $\frac{13}{16}$	* The average annual increase of cultivation here entered as cawnies 6,699, is in wet (ayen nunjah) land, but it is proper to mention that the gross annual increase of revenue stated as 95,462 rupees, includes the teerwah jastee or additional rent, levied on dry land, converted into wet by circar water, the extent thereof may be stated in round figures at 6,000 cawnies, or 7,934 acres
		1847	2,855	1241	7,708	63,021	1257	24,327	2,83,195	—	—	—	—	—	—	
		1848	3,785	1242	11,231	99,570	1258	18,850	2,15,642	—	—	—	—	—	—	
		1849	1,848	1243	12,931	1,19,055	1259	15,719	1,74,488	—	—	—	—	—	—	
		1850	4,775	1244	18,466	1,78,277	1260	22,604	2,52,632	—	—	—	—	—	—	
		1851	2,494	1245	19,397	1,88,766	1261	23,044	2,65,652	—	—	—	—	—	—	
		1852	3,169	1246	19,338	1,91,059	1262	21,475	2,14,593	—	—	—	—	—	—	
			18,926	- -	89,071	8,39,748	- -	1,26,019	14,35,202	36,948	5,95,454	92,613	5,02,841	83,806	34	
	GRAND TOTAL - - -		2,46,619	- -	2,32,379	22,12,900	- -	3,39,562	37,40,297	1,07,183	15,27,397	1,53,346	13,74,051	85,878	34 $\frac{11}{16}$	† If the increase derived from the rented villages of the Kollimalay Jaghire at about 4,000 rupees per annum, was added, the total benefit would be raised from 85,878 rupees to 90,000
	Average of 16 years - -	-	- -	- -	14,523 or acre 19,204	1,38,306	-	21,222 or acre 26,062	2,33,768	* 6,699 or acre 8,858	95,462	9,584	† 85,878	- -	34 $\frac{11}{16}$	

(signed) *A Hall*, Collector of South Arcot

(A true copy)

(signed) B Cunliffe, Secretary

APPENDIX (E).

STATEMENT of ANNICUT LANDS in *Tanjore*.

Total Extent Cultivated and (Waste) of Nunjah Land under River Irrigation	Benz.	Average Rate per Valey.	—
*Valies.**	*Rs.*	*Rs. a. p.*	
97,076	34,70,473	35 11 11	* A valey is equal to 5 cawnies or 6–6 acres.

STATEMENT of CULTIVATION.

—	Fusly.	Cultivation	Standard Benz.	Settlement Benz on actual Produce and Price	Actual Collections deducting subsequent Remissions	REMARKS
		Valies.				
Before Annicut -	1240	82,023	28,13,987	26,31,427	26,00,507	The remissions here deducted rather exceed the truth, being for the entire district, and not for the annicut lands only. As the details for the annicut lands could not be ascertained, and the difference would not be great, the entire remissions were deducted in order that no profit might be claimed for the annicut which was open to any question.
	1241	82,318	28,24,106	27,32,126	27,06,677	
	1242	84,508	28,99,240	29,98,184	29,78,890	
	1243	82,548	28,31,997	31,17,291	30,82,652	
	1244	85,407	29,30,082	28,40,589	28,27,133	
	1245	84,682	29,05,210	26,69,023	26,43,464	
Average -	–	83,581	28,67,437	28,31,440	28,06,554	
After Annicut -	1246	80,537	27,63,006	28,69,487	28,52,363	
	1247	86,692	29,74,167	28,75,844	28,60,546	
	1248	87,183	29,91,012	29,91,744	29,76,887	
	1249	88,253	30,27,721	29,91,747	29,76,498	
	1250	88,471	30,35,200	27,98,976	27,82,692	
	1251	89,810	30,81,138	25,73,458	25,56,606	
	1252	89,562	30,72,630	27,99,411	27,80,672	
	1253	89,304	30,50,290	29,41,484	29,20,659	
	1254	90,130	30,77,564	30,24,200	30,06,156	
	1255	91,205	31,17,120	34,08,706	33,99,457	
	1256	92,241	31,51,087	33,75,657	33,71,764	
	1257	91,761	31,17,484	30,67,893	30,63.673	
	1258	92,760	31,18,089	29,17,144	29,11,249	
	1259	93,571	31,44,352	30,34,287	30,28,741	
	1260	93,799	31,50,811	30,81,039	30,69,706	
	1261	93,871	31,49,046	30,70,388	30,70,388	
	1262	95,570	33,98,210	33,73,148	31,08,535	
Average -	–	90,277	30,83,466	30,11,448	29,84,506	
Increase -	-	6,696	2,16,029	1.80,008	1,77,952	

Note.—The preceding comparison commences with fusly 1240, as being the earliest year for which returns of the nunjah lands can be obtained, divided into classes according to their descriptions of irrigation. On referring to the total nunjah cultivation, exhibited in the detailed statement of the Tanjore revenues furnished by Mr. Forbes, it will be observed that the lands dependent on the annicut constitute about nine-tenths of the total nunjah cultivation, and that if returns of the river-irrigated portion could have been obtained for a period anterior to 1240, the comparison would have been still more favourable to the annicut, as the general nunjah cultivation in the six years immediately preceding the construction of the annicut which are taken for the comparison was unusually large. In proof of this point the following abstract is annexed:—

STATEMENT of the Total Nunjah Cultivation, including Lands under River Irrigation, and those which are not.

	Valies.
Quinquennial average from $\frac{1210}{1800}$ to $\frac{1214}{1804}$ - -	73,093
Ditto - - ditto - 1215 to 1219 - -	80,860
Ditto - - ditto - 1220 to 1224 - -	82,390
Ditto - - ditto - 1224 to 1229 - -	81,371
Ditto - - ditto - 1230 to 1234 - -	80,995
Ditto - - ditto - 1235 to 1239 - -	85,854
Ditto - - ditto - 1240 to 1244 - -	90,891

The following short Table shows the Cultivation of the Nunjah Land for 12 years, commencing with Fusly 1240.

	Fusly.	Total Nunjah Cultivation	River-irrigated Portion.
Before Annicut -	1240	89,554	82,023
	1241	89,848	82,318
	1242	92,038	84,508
	1243	90,078	82,548
	1244	92,937	85,407
	1245	92,212	84,682
After Annicut -	1247	94,103	86,692
	1248	94,345	87,183
	1249	95,783	88,253
	1250	95,712	88,471
	1251	98,571	89,810
	1252	97,968	89,562

It will be observed that the lands irrigated by the river consist of 97,096 valies, and that, since the construction of the annicut, cultivation has progressively increased from 84,682 to 95,570 valies. The portion now waste is within 1 per cent., and it is evident that even with the greatest care accidental circumstances must always affect cultivation to some degree in so large an irrigated area. The river embankments in the Delta of Tanjore exceed 2,000 miles in length, and the tunnels and other masonry works are proportionally numerous.

Revenue Board Office, Fort St. George,
21 May 1855.

B. Cunliffe,
Secretary.

STATEMENT of CULTIVATION and REVENUE from all SOURCES in the District of *Tanjore*, from

A. D.	FUSLY.	NUNJAH LAND.										POONJAH BAGAYET AND TOPE.	
		Extent.	Gross Produce.	Iyen Beriz.	Mungoo Rented Villages. Increase by Price.	Mungoo Rented Villages. Decrease by Price.	Net Beriz.	Jummabundy Price per Collum.		Current Price per Collum.		Aumanie out of the Extent mentioned in the 2d Column.	Extent.	Beriz.
	1.	2.	3.	4.	5.	6.	7.	8.		9.		10.	11.	12.
								F.	*C.*	*F.*	*C.*	*Rs.*		
1800	1210	81,137	-	-	-	-	41,50,734	-	-	3	$20\frac{11}{16}$	72,802	33,057	3,80,321
1801	1211	83,375	-	-	-	-	29,92,374	-	-	3	$13\frac{7}{16}$	74,614	29,122	1,99,446
1802	1212	64,168	-	-	-	-	25,27,170	-	-	5	1	62,555	24,065	1,82,456
1803	1213	65,292	-	-	-	-	22,85,007	-	-	4	$16\frac{1}{4}$	64,051	22,475	1,72,041
1804	1214	71,493	-	-	-	-	29,32,218	-	-	4	$4\frac{1}{4}$	unknown -	33,444	3,67,025
TOTAL - -		3,65,465	-	-	-	-	148,87,503	-	-	20	$23\frac{5}{8}$	2,74,022	1,42,163	13,01,289
AVERAGE - -		73,093	-	-	-	-	29,77,500	-	-	4	$4\frac{3}{4}$	68,505	28,432	2,60,258
1805	1215	83,612	-	-	-	-	27,94,587	-	-	3	$24\frac{1}{4}$	unknown -	35,422	2,86,123
1806	1216	68,499	-	-	-	-	24,85,175	-	-	4	13	unknown -	29,749	2,56,584
1807	1217	83,957	-	-	-	-	31,73,521	-	-	4	$10\frac{3}{4}$	7,108	34,540	3,39,736
1808	1218	84,158	-	-	-	-	32,07,645	-	-	4	$12\frac{9}{16}$	2,185	35,052	3,45,344
1809	1219	84,274	-	-	-	-	31,53,619	-	-	4	10	6,273	35,327	3,49,164
TOTAL - -		4,04,300	-	-	-	-	148,14,547	-	-	21	$6\frac{9}{16}$	15,566	1,70,090	15,76,951
AVERAGE - -		80,860	-	-	-	-	29,62,909	-	-	4	$7\frac{3}{4}$	5,189	34,018	3,15,390
1810	1220	81,012	-	-	-	-	27,11,828	-	-	3	$23\frac{1}{3}$	20,162	30,883	3,12,517
1811	1221	79,607	-	-	-	-	27,46,104	-	-	3	31	5,805	30,038	2,99,047
1812	1222	82,924	-	-	-	-	30,06,420	-	-	3	$28\frac{1}{2}$	3,742	31,191	3,11,389
1813	1223	84,095	-	-	-	-	30,35,429	-	-	3	$25\frac{14}{16}$	3,337	31,456	3,14,454
1814	1224	84,312	-	-	-	-	29,98,006	-	-	2	17	3,593	31,504	3,14,525
TOTAL - -		4,11,950	-	-	-	-	144,97,787	-	-	17	$29\frac{1}{2}$	36,639	1,55,072	15,51,932
AVERAGE - -		82,390	-	-	-	-	28,99,557	-	-	3	$18\frac{3}{4}$	7,328	31,014	3,10,386
1815	1225	84,162	116,14,209	-	-	-	28,01,156	-	-	2	21	12,588	29,933	3,08,986
1816	1226	81,059	111,49,099	-	-	-	28,11,847	-	-	3	$28\frac{1}{4}$	11,005	29,533	3,04,991
1817	1227	81,334	115,78,671	-	-	-	27,44,003	-	-	2	$20\frac{1}{8}$	10,841	29,720	3,05,090
1818	1228	80,141	116,08,599	-	-	-	27,30,364	-	-	2	$23\frac{7}{8}$	7,066	29,850	3,07,524
1819	1229	80,157	115,91,296	-	-	-	27,87,100	-	-	2	$24\frac{9}{32}$	6,495	30,466	3,13,518
TOTAL - -		4,06,853	573,41,874	-	-	-	138,74,470	-	-	14	$21\frac{17}{32}$	47,995	1,49,502	15,40,109
AVERAGE - -		81,371	114,68,375	-	-	-	27,74,894	-	-	2	30	9,599	29,900	3,08,022
1820	1230	80,115	118,12,449	-	-	-	25,98,482	-	-	2	15	9,586	31,564	3,06,681
1821	1231	80,419	109,31,058	-	-	-	25,14,066	-	-	3	$5\frac{1}{2}$	23,229	27,822	2,91,646
1822	1232	80,694	123,02,798	27,28,084	-	-	27,28,084	3	$3\frac{1}{32}$	3	$18\frac{7}{8}$	13,860	28,315	2,99,161
1823	1233	81,904	126,16,022	29,43,729	[illegible]	-	36,59,343	3	$3\frac{2}{32}$	5	$13\frac{1}{4}$	10,062	28,597	3,03,397
1824	1234	81,845	128,50,210	30,54,437	[illegible]	-	44,23,827	3	$3\frac{1}{32}$	5	$16\frac{1}{4}$	10,320	28,954	3,12,851
TOTAL - -		4,04,977	605,12,537	-	-	-	159,23,802	-	-	20	$5\frac{1}{4}$	67,557	1,45,251	15,13,736
AVERAGE - -		80,995	121,02,507	-	-	-	31,84,760	-	-	4	1	13,511	29,050	3,02,747

(*Continued on p.* 206)

FUSLY 1210 to 1262, with the ANNUAL EXPENDITURE on IRRIGATION and COMMUNICATION.

TOTAL TARIFF.		Shrotriem and Money Rented, Grain Rented Villages and Poliputs.	Covil Shottunterm.	Total Land Demand as per Jummabundy Statement.	Amount omitted in the Jummabundy Statement of each year, and brought to Account the next year.	TOTAL.	Deduct of [illegible] Lands.	Remainder.	Of which			
Extent.	Beriz.								Amount Collected.	Amount Remitted.	Balance to be Collected.	Out of the Amount entered in Column 22, Collected by Public Sale of Lands.
13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.
1,14,194	45,31,055	88,542	- - -	46,19,597	- - -	46,19,597	1,16,435	4[illegible],162	44,07,434	95,728	—	—
1,12,497	31,91,820	94,214	- - -	32,86,034	- - -	32,86,034	1,02,346	[illegible]688	31,27,714	55,974	—	—
88,233	27,09,626	95,072	- - -	28,04,698	- - -	28,04,6[illegible]	[illegible],943	[illegible],755	26,63,257	79,498	—	—
87,767	24,57,048	90,705	- - -	25,47,753	- - -	25,47,753	30,337	[illegible],416	23,58,761	1,58,655	—	—
1,04,937	32,99,243	1,00,930	- - -	34,00,173	- - -	34,00,173	69,145	[illegible],028	33,31,028	—	—	—
5,07,628	161,88,792	4,69,463	- - -	166,58,255	- - -	166,58,255	[illegible],80,20[illegible]	1,[illegible]78,049	15,88,194	3,89,855	—	—
1,01,525	32,37,758	93,893	- - -	33,31,651	- - -	33,31,651	76,041	[illegible]55,610	31,77,639	77,971	—	—
1,19,034	30,80,710	99,975	- - -	31,80,685	- - -	31,80,685	30,384	[illegible]0,301	31,00,301	—	—	—
98,048	27,41,759	1,01,000	- - -	28,42,759	- - -	28,42,759	25,62[illegible]	[illegible],17,137	28,17,137	—	—	—
1,18,497	35,13,257	1,05,745	- - -	36,19,002	- - -	36,19,002	63,37[illegible]	[illegible],5,624	35,55,624	—	—	—
1,19,210	35,52,989	1,05,138	- - -	36,58,127	- - -	36,58,127	[illegible],916	[illegible],211	35,95,146	7,065	—	—
1,19,601	35,02,783	1,05,047	- - -	36,07,830	- - -	36,07,830	[illegible]0,20[illegible]	[illegible],621	33,18,364	2,29,257	—	—
5,74,390	163,91,498	5,16,905	- - -	169,08,403	- - -	169,08,403	[illegible],503	[illegible]6,2[illegible],894	1,63,86,572	2,36,322	—	—
1,14,878	32,78,299	1,03,381	- - -	33,81,680	- - -	33,81,[illegible]80	[illegible]102	[illegible]0,24,578	32,77,31[illegible]	47,264	—	—
1,11,895	30,24,345	1,05,182	- - -	31,29,527	- - -	31,29,[illegible]27	54,76[illegible]	3[illegible],74,763	30,30,62[illegible]	44,141	—	—
1,09,645	30,45,151	1,08,615	- - -	31,53,766	- - -	31,53,766	64,64[illegible]	3[illegible],89,123	30,33,94[illegible]	55,183	—	—
1,14,115	33,17,809	1,11,630	- - -	34,29,439	- - -	34,29,439	64,959	[illegible],64,48[illegible]	32,74,27[illegible]	90,210	—	—
1,15,551	33,49,883	1,05,729	- - -	34,55,612	1,59,383	36,14,995	[illegible],137	35,49,858	34,76,32[illegible]	73,538	—	—
1,15,816	33,12,531	1,02,482	1,18,671	35,33,684	- - -	35,33,684	[illegible]7,672	34,66,012	34,22,81[illegible]	43,199	—	—
5,67,022	160,49,719	5,33,638	1,18,671	167,02,028	1,59,383	168,61,411	3,17,174	[illegible]65,44,237	1,62,37,96[illegible]	3,06,271		—
1,13,404	32,09,944	1,06,728	- - -	33,40,406	- - -	33,72,282	63,435	[illegible]3,08,847	32,47,59[illegible]	61,254	—	—
1,14,099	31,10,142	1,03,184	1,49,952	33,63,278	- - -	33,63,2[illegible]8	61,911	33,01,367	32,89,96[illegible]	11,400	—	—
1,10,592	31,16,838	1,05,837	1,65,912	33,88,587	- - -	33,88,587	4,644	33,83,943	33,30,40[illegible]	53,540	—	—
1,11,054	30,49,093	1,02,169	1,65,124	33,16,386	- - -	33,16,386	4,64[illegible]	33,11,740	32,56,03[illegible]	55,701	—	—
1,09,991	30,37,888	1,02,814	1,65,172	33,05,874	- - -	33,05,874	4,685	33,01,189	30,97,52[illegible]	2,03,669	—	—
1,10,623	31,00,618	1,03,441	1,67,430	33,71,483	- - -	33,71,[illegible]	4,688	33,66,801	31,01,71[illegible]	2,65,090	—	—
5,56,355	154,14,579	5,17,445	8,13,590	167,45,614	- - -	167,45,31[illegible]	80,574	1,66,65,040	1,60,75,64[illegible]	5,89,400	—	—
1,11,271	30,82,916	1,03,489	1,62,718	33,49,123	- - -	33,49,123	16,11[illegible]	33,33,008	32,15,1[illegible]	1,17,880	—	—
1,11,678	29,95,163	1,02,355	1,67,022	31,74,540	- - -	31,74,540	4,814	31,69,726	31,66,3[illegible]	3,369	—	—
1,08,241	28,05,712	1,03,981	1,59,691	30,69,384	- - -	30,69,384	4,439	30,64,945	30,64,8[illegible]	106	—	—
1,09,009	30,27,245	1,05,149	1,70,041	33,02,435	- - -	33,02,4[illegible]	[illegible]	32,97,758	32,90,4[illegible]	7,277	—	—
1,10,501	39,62,740	1,08,892	2,05,830	42,77,462	1,69,8[illegible]	44,47,[illegible]	[illegible],3[illegible]	44,44,919	43,08,70[illegible]	1,36,212	—	—
1,10,799	47,36,678	1,09,222	2,35,559	50,81,459	- - -	50,81,459	4,6[illegible]	50,76,783	49,63,43[illegible]	1,13,350	—	—
5,50,228	174,37,538	5,29,599	9,38,143	189,05,280	1,69,8[illegible]	190,75,[illegible]	[illegible]	[illegible],90,54,131	1,87,93,8[illegible]7	2,60,314	—	—
1,10,046	34,87,508	1,05,920	1,87,628	37,81,056	- - -	38,15,[illegible]	[illegible]	38,10,826	37,58,7[illegible]	52,063	—	—

(Continued on following page.)

STATEMENT of Cultivation and Revenue from all Sources in the District of *Tanjore* from

(Continued from preceding page.)

A. D.	Fusly.	COLLECTION OF EXTRA SOURCES.										
				Sea Customs.								
		Sayer. 26.	Salt. 27.	Export. 28.	Import. 29.	Total. 30.	Abkarry. 31.	Farms. 32.	House Rent. 33.	Loom Tax. 34.	Stamps. 35.	Total. 36.
1800	1210	1,86,461	3,959	- -	- - -	20,58[illegible]	12,389	25,028	- - -	10,212	- - -	2,58,630
1801	1211	85,585	4,032	- -	- - -	26,30[illegible]	11,789	20,144	- - -	6,901	- - -	1,54,755
1802	1212	46,552	5,402	- -	- - -	30,08[illegible]	11,191	13,987	- - -	6,832	- - -	1,14,045
1803	1213	37,292	4,623	- -	- - -	34,16[illegible]	12,102	9,739	- - -	6,343	- - -	1,04,268
1804	1214	1,08,635	5,093	- -	- - -	35,17[illegible]	22,500	5,815	- - -	6,319	- - -	1,83,540
TOTAL - - -		4,67,526	23,109	- -	- - -	1,46,812	69,971	74,713	- - -	36,607	- - -	8,15,238
AVERAGE - - -		92,905	4,622	- -	- - -	29,262	13,994	14,943	- -	7,321	- - -	1,63,047
1805	1215	1,27,237	67,600	- -	- - -	37,620	21,485	5,381	- - -	5,825	- - -	2,65,148
1806	1216	9,091	76,312	- -	- - -	33,250	23,754	9,927	- - -	6,632	- - -	1,58,966
1807	1217	3,593	2,21,473	- -	- - -	48,977	25,317	8,457	- - -	6,516	- - -	2,14,333
1808	1218	1,15,513	1,46,674	- -	- - -	56,819	29,657	21,631	- - -	7,071	146	3,77,511
1809	1219	1,76,039	1,93,469	- -	- - -	52,275	32,632	14,986	- - -	6,653	36,655	5,12,709
TOTAL - - -		4,31,173	6,05,528	- -	- - -	2,28,941	1,32,845	60,382	- - -	32,697	36,801	15,28,667
AVERAGE - - -		86,295	1,21,106	- -	- - -	45,788	26,569	12,076	- - -	6,539	18,400	3,05,733
1810	1220	1,84,979	2,12,287	- -	- - -	74,945	30,325	15,729	- - -	8,439	30,103	5,56,807
1811	1221	1,70,577	1,91,311	- -	- - -	64,691	33,198	15,800	- - -	8,405	24,093	5,08,075
1812	1222	1,92,459	2,03,203	- -	- - -	67,832	31,106	11,124	- - -	9,514	26,491	5,41,729
1813	1223	2,13,737	2,41,047	- -	- - -	86,826	28,695	13,452	- - -	9,132	33,241	6,26,130
1814	1224	2,23,436	2,27,329	- -	- - -	1,03,912	28,953	12,390	- - -	9,101	47,459	6,52,580
TOTAL - - -		9,85,188	10,75,177	- -	- - -	3,98.206	1,52,277	68,495	- - -	44,591	1,61,387	28,85,821
AVERAGE - - -		1,97,038	2,15,035	- -	- - -	79,641	30,455	13,699	- - -	8,918	32,278	5,77,064
1815	1225	2,29,230	2,20,633	- -	- - -	1,10,518	28,979	15,246	- - -	9,447	47,918	6,61,966
1816	1226	2,35,162	2,25,522	- -	- - -	95,084	30,999	15,930	- - -	9,477	42,540	6,54,664
1817	1227	2,39,991	2,19,782	- -	- - -	91,176	32,593	16,182	- - -	9,517	39,193	6,48,434
1818	1228	2,63,122	2,52,263	- -	- - -	83,620	33,662	18,704	- - -	9,759	39,923	7,01,053
1819	1229	1,81,721	2,61,176	- -	- - -	97,181	35,512	18,065	- - -	10,307	43,443	7,47,405
TOTAL - - -		12,49,226	11,79,376	- -	- - -	4,77,524	1,61,745	84,127	- - -	48,507	2,13,017	34,13,522
AVERAGE - - -		2,49,845	2,35,875	- -	- - -	95,505	32,349	16,825	- - -	9,702	42,603	6,82,704
1820	1230	3,13,728	3,91,845	- -	- - -	84,949	4,075	18,654	- - -	10,935	48,902	9,09,765
1821	1231	3,53,155	2,99,360	- -	- - -	88,692	41,980	17,186	- - -	10,559	53,993	8,64,925
1822	1232	3,57,879	2,60,108	- -	- - -	79,953	46,465	20,880	- - -	10,782	57,399	8,33,466
1823	1233	3,89,161	3,01,613	- -	- - -	67,741	45,182	19,506	- - -	11,075	57,726	8,92,004
1824	1234	4,03,503	3,11,485	- -	- - -	32,078	46,027	19,272	- - -	10,830	66,521	9,19,716
TOTAL - - -		18,17,426	15,04,411	- -	- - -	3,83,413	2,20,406	95,498	- - -	54,181	2,84,541	44,19,876
AVERAGE - - -		3,63,485	3,12,882	- -	- - -	76,683	44,081	19,100	- - -	10,836	56,908	8,83,975

(*Continued on page* 208.)

Fusly 1210 to 1262, with the Annual Expenditure on Irrigation and Communication—*continued.*

Total Collection, Land and Extra Sources too, or Columns 23 and 37. 37.	Average Price of Wet Land per Valey, as shown by the Sale Deeds passing through the Cutcherry. 38.	Loss in consequence of Drought. 39.	PARTICULARS OF MARAMUT								
			Expended on Irrigation Works. 40.	Expended on Roads and Bridges from the Government Treasury. 41.	Total of Columns 2 and 3. 42.	Expended on Roads and Bridges from the Surplus Pagoda Funds. 43.	Total Column [illegible] 44	[illegible] 45.	Navigation Works. 46.	TOTAL. 47.	48.
46,66,064	- - -	- - -	- - -	- - -	- - -	- - -	- - -	[illegible]	- - -	- - -	
32,82,469	- - -	- - -	- - -	- - -	1,68,177	- - -	- - -	[illegible]	- - -	1,68,177	
27,77,302	- - -	- - -	- - -	- - -	1,29,547	- - -	-	[illegible]	- - -	1,29,547	Mr. C. Harris.
24,63,029	- - -	- - -	- - -	- - -	1,09,858	- - -	-	[illegible]	- - -	1,09,858	
35,14,568	- - -	- - -	- - -	- - -	86,643	- - -	- - -	[illegible]	- - -	86,643	
167,03,432	- - -	- - -	- - -	- - -	4,94,225	- - -	- - -	[illegible]	- - -	4,94,225	
33,40,686	- - -	- - -	- - -	- - -	1,23,556	- - -	- - -	[illegible]	- - -	1,23,556	
33,65,449	- - -	- - -	- - -	- - -	1,09,856	- - -	- - -	[illegible]	- - -	1,09,856	
29,76,103	- - -	- - -	- - -	- - -	1,17,956	- - -	- - -	[illegible]	- - -	1,17,956	
37,69,957	- - -	- - -	- - -	- - -	75,195	- - -	- - -	[illegible]	- - -	75,195	
39,72,657	- - -	- - -	- - -	- - -	38,376	- - -	- - -	[illegible]	- - -	38,376	
38,31,073	- - -	2,17,246	- - -	- - -	32,335	- - -	- - -	[illegible]	- - -	32,335	
179,15,239	- - -	2,17,246	- - -	- - -	3,73,718	- - -	- - -	[illegible]	- - -	3,73,718	Mr. J. Wallace.
35,83,047	- - -	- - -	- - -	- - -	74,743	- - -	- -	[illegible]	- - -	74,743	
35,87,429	- - -	32,669	- - -	- - -	88,402	- - -	- - -	[illegible]	- - -	88,402	
35,42,015	- - -	49,560	- - -	- - -	55,257	- - -	- - -	[illegible]	- - -	55,257	
38,16,000	- - -	42,902	- - -	- - -	90,013	- - -	- - -	[illegible]	- - -	90,013	
41,02,450	- - -	11,764	- - -	- - -	1,02,510	- - -	- - -	[illegible]	- - -	1,02,510	
40,75,393	- - -	- - -	- - -	- - -	74,000	- - -	- - -	[illegible]	- - -	74,000	
191,23,287	- - -	1,36,895	- - -	- - -	4,10,182	- - -	- -	[illegible]	- - -	4,10,182	
38,24,657	- - -	- - -	- - -	- - -	82,036	- - -	- - -	[illegible]	- - -	82,036	Mr. J. Kepburn.
39,51,933	- - -	- - -	- - -	- - -	1,03,358	- - -	- -	[illegible]	- - -	1,03,358	
39,85,067	- - -	29,961	77,161	30,587	1,07,748	- - -	30,587	[illegible]	- - -	1,07,748	
39,04,473	- - -	36,291	45,539	15,941	61,480	- - -	15,941	[illegible]	- - -	61,480	
37,98,573	- - -	1,85,014	77,674	16,234	93,908	- - -	16,234	[illegible]	- - -	93,908	
38,49,116	- - -	2,47,911	1,30,896	24,963	1,55,859	- - -	24,963	[illegible]	- - -	1,55,859	
194,89,162	- - -	4,99,180	3,31,276	87,725	5,22,353	- - -	87,725	[illegible]	- - -	5,22,353	Mr. John Cotton.
38,97,832	- - -	- - -	- - -	- - -	1,04,470	- - -	- -	[illegible]	- - -	1,04,470	
40,76,122	- - -	- - -	50,809	10,351	61,160	- - -	[illegible]	[illegible]	- - -	61,160	
39,29,764	- - -	- - -	52,512	10,511	63,023	- - -	[illegible]	[illegible]	- - -	63,023	
41,23,947	- - -	6,844	54,206	8,772	62,978	- - -		[illegible]	- - -	62,978	
52,00,711	$82\frac{11}{16}$	1,35,862	66,376	4,925	71,301	- - -		[illegible]	- - -	71,301	
58,83,149	$82\frac{3}{4}$	1,11,933	57,903	3,155	61,058	- - -		[illegible]	- - -	61,058	
232,13,693	- - -	2,54,642	2,81,806	37,714	3,19,520	- - -	37,714	[illegible]	- - -	3,19,520	Mr. John Cotton.
46,42,738	- - -	- - -	56,361	7,543	63,904	- - -	[illegible]	[illegible]	- - -	63,904	

STATEMENT of Cultivation and Revenue from all Sources in the District of *Tanjore* from

A. D.	Fusly.	NUNJAH LAND. Extent.	Gross Produce.	Iyen [illegible]	[illegible] Rented Villages. Increase by Price.	Decrease by Price.	Net Beriz.	Jummabundy Price per Collum.		Current Price per Collum.		Aumanie out of the Extent mentioned in the 2d Column.	Poonjah Bagayet and Tope. Extent.	Beriz.
	1.	2.	3.	[illegible]	5.	6.	7.	8.		9.		10.	11.	12.
(Continued from page 202.)								*F.*	*C.*	[illegible]	*C.*	*Rs.*		
1825	1235	83,062	126,96,617	28,2[illegible]	1,38,194	-	29,62,992	3	$3\frac{3}{32}$	3	$14\frac{3}{8}$	11,129	28,780	3,13,770
1826	1236	85,745	133,43,787	28,10[illegible]	-	3,99,600	24,11,294	3	$3\frac{3}{32}$	2	$12\frac{1}{4}$	9,544	29,810	3,31,868
1827	1237	85,631	127,35,873	26,[illegible]	-	4,30,582	22,11,345	3	$3\frac{3}{32}$	2	$10\frac{3}{8}$	15,082	29,705	3,43,274
1828	1238	86,960	122,00,688	28,17,[illegible]	2,44,303	-	30,62,105	3	$3\frac{3}{32}$	[illegible]	$27\frac{7}{8}$	13,661	30,442	3,56,462
1829	1239	87,872	12[illegible],03,995	27,28,[illegible]	[illegible]	-	27,24,832	3	$3\frac{3}{32}$	[illegible]	$6\frac{9}{16}$	12,905	30,814	3,63,291
TOTAL		2,29,270	633,80,960	138,19,[illegible]	3,84,677	8,30,182	133,72,568	15	$15\frac{15}{32}$	6	$7\frac{11}{16}$	62,321	1,49,551	17,08,665
AVERAGE		85,854	126,76,192	27,63,[illegible]	-	-	26,74,514	3	$3\frac{3}{32}$	3	$1\frac{1}{2}$	12,464	29,910	3,41,733
1830	1240	89,554	127,92,272	27,63,[illegible]	-	10,635	27,53,300	3	$3\frac{3}{32}$	[illegible]	$30\frac{11}{16}$	9,690	32,292	3,83,562
1831	1241	89,848	132,51,974	28,50,[illegible]	-	5,338	28,53,999	3	$3\frac{3}{32}$	2	$29\frac{3}{8}$	10,119	31,075	3,80,780
1832	1242	92,038	132,56,031	29,89,[illegible]	1,80,370	-	31,20,057	3	$3\frac{3}{32}$	4	$\frac{3}{8}$	8,982	30,163	3,80,134
1833	1243	90,078	128,45,883	29,70,[illegible]	2,68,528	-	32,39,164	3	$3\frac{3}{32}$	4	$26\frac{1}{4}$	7,957	31,407	3,99,522
1834	1244	92,937	134,88,892	29.47,[illegible]	14,325	-	29,62,462	3	$3\frac{3}{32}$	[illegible]	14	8,025	32,388	4,06,809
TOTAL		4,54,455	656,35,052	145,31,[illegible]	4,[illegible]	15,973	149,28,982	15	$15\frac{15}{32}$	13	$4\frac{11}{16}$	44,773	1,57,325	19,50,807
AVERAGE		90,891	131,27,010	29,06,[illegible]	-	-	29,85,796	3	$3\frac{3}{32}$	3	$20\frac{1}{8}$	8,954	31,465	30,90,162
1835	1245	92,212	130,07,900	27,99,[illegible]	-	8,563	27,90,896	3	$3\frac{3}{32}$	2	$30\frac{1}{16}$	7,412	33,823	4,13,560
1836	1246	88,068	118,47,457	28,39,77[illegible]	1,51,686	-	29,91,360	3	$3\frac{3}{32}$	4	$23\frac{1}{8}$	7,388	33,394	4,12,527
1837	1247	94,103	138,47,210	30,08,[illegible]	3,930	-	30,12,320	3	$3\frac{3}{32}$	3	$12\frac{13}{16}$	6,403	34,108	4,18,367
1838	1248	94,345	140,21,436	30,65,44[illegible]	39,571	-	31,05,019	3	$3\frac{3}{32}$	3	$17\frac{1}{8}$	6,527	34,664	4,20,384
1839	1249	95,783	141,85,207	30,89,91[illegible]	23,710	-	31,13,620	3	$3\frac{3}{32}$	3	$12\frac{1}{2}$	1,737	35,152	4,26,215
TOTAL		4,64,511	669,09,216	148,02,98[illegible]	2,18,797	8,563	150,13,215	15	$15\frac{15}{32}$	7	$31\frac{5}{8}$	29,467	1,71,141	20,91,053
AVERAGE		92,902	133,81,843	29,60,[illegible]	-	-	30,02,643	3	$3\frac{3}{32}$	3	$19\frac{1}{8}$	5,893	34,288	4,18,210
1840	1250	96,712	143,80,030	30,55,18[illegible]	-	1,24,343	29,30,837	3	$3\frac{3}{32}$	2	$16\frac{1}{8}$	1,009	35,362	4,31,267
1841	1251	98,571	145,83,993	30,26,69[illegible]	-	3,16,108	27,10,589	3	$3\frac{3}{32}$	1	$23\frac{3}{4}$	1,372	34,561	4,34,403
1842	1252	97,968	144,53,177	30,59,92[illegible]	-	1,28,990	29,30,935	3	$3\frac{3}{32}$	2	$13\frac{3}{4}$	898	33,688	4,27,317
1843	1253	97,976	142,39,847	30,77,01[illegible]	895	-	30,77,911	3	$3\frac{3}{32}$	3	$6\frac{3}{4}$	1,561	33,607	4,25,728
1844	1254	97,387	143,89,537	31,21,748	12,842	-	31,34,590	3	$3\frac{3}{32}$	3	$1\frac{9}{16}$	1,353	33,519	4,17,000
TOTAL		4,88,614	720,46,584	153,40,[illegible]	13,737	5,69,441	147,84,862	15	$15\frac{15}{32}$	3	$8\frac{5}{16}$	6,193	1,70,827	21,35,715
AVERAGE		97,723	144,09,317	30,68,11[illegible]	-	-	29,56,972	3	$3\frac{3}{32}$	2	$20\frac{7}{8}$	1,239	34,165	4,27,143
1845	1255	99,419	146,87,329	32,32,831	[illegible]	-	35,40,366	3	$3\frac{3}{32}$	4	$15\frac{15}{16}$	2,314	33,285	4,15,669
1846	1256	1,00,746	150,07,316	32,67,754	[illegible]	-	35,10,359	3	$3\frac{3}{32}$	[illegible]	$6\frac{3}{8}$	1,316	34,111	4,21,422
1847	1257	1,00,711	149,78,219	32,14,445	-	4,930	32,09,515	3	$3\frac{3}{32}$	2	$30\frac{13}{16}$	940	34,774	4,25,875
1848	1258	1,01,983	150,93,712	32,13,210	-	1,53,218	30,59,992	3	$3\frac{3}{32}$	2	$15\frac{7}{32}$	1,317	35,131	4,29,345
1849	1259	1,0[illegible]	15[illegible],15,063	32,48,783	-	82,044	31,61,739	3	$3\frac{3}{32}$	2	$26\frac{11}{32}$	1,372	34,389	4,27,893
TOTAL		5,05,116	749,31,639	161,77,023	[illegible]	2,40,192	164,86,971	15	$15\frac{15}{32}$	6	$30\frac{11}{16}$	7,259	1,71,690	21,20,204
AVERAGE		1,01,023	149,86,328	32,35,405	-	-	32,97,394	3	$3\frac{3}{32}$	3	$12\frac{1}{2}$	1,452	34,338	4,24,041
1850	1260	1,02,046	152,07,045	32,50,688	-	42,451	32,08,233	3	$3\frac{3}{32}$	2	$29\frac{9}{32}$	1,207	34,793	4,29,848
1851	1261	1,02,768	151,48,512	32,39,835	-	34,849	32,04,986	3	$3\frac{3}{32}$	2	$30\frac{7}{16}$	1,143	35,085	4,31,908
1852	1262	1,05,120	155,78,752	35,37,899	-	4,957	35,32,942	3	$3\frac{3}{32}$	[illegible]	$1\frac{3}{4}$	840	37,992	4,84,835
TOTAL		3,09,934	459,34,309	100,28,418	-	82,257	99,46,161	9	$9\frac{9}{32}$	-	-	3,190	1,07,870	13,46,191
AVERAGE		1,03,311	153,11,436	33,42,806	-	27,419	33,15,387	3	$3\frac{3}{32}$	-	-	1,063	35,957	4,48,730

Fusly 1210 to 1262, with the Annual Expenditure on Irri[illegible]tion and Communication—*continued.*

TOTAL TARIFF.		Shrotiem and Money Rented, Grain Rented, Villages and Poliputs.	Covil Shottu[illegible]n.	Total Land Demand as per Jummabundy Statement.	Amount omitted in the Jummabundy Statement of each year, and brought to Account the next year.	TOTAL.	Deduct [illegible]	Remainder.	Of which			
Extent. 13.	Beriz. 14.	15.	16.	17.	18.	19.	viz. 20.	21.	Amount Collected. 22.	Amount Remitted. 23.	Balance to be Collected. 24.	Out of the Amount entered in Column 22, collected by Public Sale of Lands. 25.
1,11,842	32,76,762	1,03,824	1,78,667	35,59,253	- - -	35,59,253	- - -	35,59,[illegible]	35,59,050	203	—	—
1,15,555	27,43,162	1,01,275	1,61,804	30,06,241	- - -	30,06,241	- - -	30,06,[illegible]	30,04,393	1,848	—	—
1,15,336	25,54,619	1,01,578	1,53,119	28,09,316	- - -	28,09,316	- - -	28,09,[illegible]	28,07,213	2,103	—	—
1,17,402	34,18,567	1,05,327	1,87,800	37,11,694	- - -	37,11,694	- - -	37,[illegible]	36,88,330	23,364	—	—
1,18,686	30,88,123	1,03,383	1,70,663	33,62,169	- - -	33,62,169	- - -	33,62,1[illegible]	33,21,668	40,501	—	—
5,78,821	150,81,233	5,15,387	8,52,053	164,48,673	- - -	164,48,673	- - -	1,64,48,6[illegible]	1,63,80,654	68,019	—	—
1,15,764	30,16,247	1,03,078	1,70,416	32,89,735	- - -	32,89,735	- - -	32,89,7[illegible]	32,76,131	13,604	—	—
1,21,846	31,36,862	1,03,313	1,78,301	34,18,476	- - -	34,18,476	- - -	34,18,4[illegible]	33,87,506	30,920	—	—
1,20,923	32,34,779	1,01,855	1,80,976	35,17,610	- - -	35,17,610	- - -	35,17,6[illegible]	34,92,161	25,449	—	—
1,22,201	35,00,191	1,05,352	1,90,840	37,96,383	- - -	37,96,383	- - -	37,96,[illegible]	37,77,089	19,294	—	—
1,21,485	36,38,686	1,06,955	1,75,965	39,21,606	- - -	39,21,606	- - -	39,21,6[illegible]	38,86,967	34,639	—	—
1,25,325	33,69,271	1,03,528	1,67,668	35,30,467	- - -	36,40,467	- - -	36,40,4[illegible]	36,27,011	13,456	—	—
6,11,780	168,79,789	5,21,003	8,93,750	182,94,542	- - -	182,94,542	- - -	1,82,94,5[illegible]	1,81,70,734	1,23,808	—	—
~~1,22,356~~	~~33,75,958~~	~~1,04,200~~	~~1,78,750~~	~~36,58,908~~	~~- - -~~	~~36,58,908~~	~~- - -~~	~~36,58,9[illegible]~~	~~36,34,147~~	~~24,761~~	~~—~~	~~—~~
1,26,035	32,04,456	1,02,516	1,60,794	34,67,766	- - -	34,67,766	- - -	34,67,7[illegible]	34,42,207	25,559	—	—
1,21,462	34,03,887	1,06,671	1,67,146	36,77,704	- - -	36,77,704	- - -	36,77,7[illegible]	36,60,566	17,124	14	—
1,28,211	34,30,687	1,04,591	1,69,881	37,05,159	- - -	37,05,159	- - -	37,05,1[illegible]	36,89,861	15,298	—	—
1,29,009	35,25,403	1,04,831	1,73,132	38,03,366	- - -	38,03,366	- - -	38,03,3[illegible]	37,88,509	14,857	—	—
1,30,935	35,39,835	1,04,485	1,73,935	38,18,255	- - -	38,18,255	- - -	38,18,2[illegible]	38,03,006	15,249	—	—
6,35,652	171,04,268	5,23,094	8,44,888	184,72,250	- - -	184,72,250	- - -	1,84,72,2[illegible]	1,83,84,149	88,087	14	—
1,27,130	34,20,853	1,04,619	1,68,978	36,94,450	- - -	36,94,450	- - -	36,94,4[illegible]	36,76,830	17,617	3	—
1,32,074	33,62,104	1,02,317	1,67,414	36,31,835	- - -	36,31,835	- - -	36,31,8[illegible]	36,15,551	16,284	—	—
1,33,223	31,4[illegible],992	1,00,593	1,59,641	34,05,226	- - -	34,05,226	- - -	34,05,2[illegible]	33,88,374	16,852	—	—
1,31,656	33,58,252	1,02,527	1,67,353	36,28,132	- - -	36,28,132	- - -	36,28,1[illegible]	36,09,393	18,739	—	—
1,31,583	35,03,639	1,03,541	1,72,587	37,79,767	- - -	37,79,767	- - -	37,79,7[illegible]	37,58,942	20,825	—	—
1,30,906	35,51,590	1,04,642	1,74,387	38,30,619	- - -	38,30,619	- - -	38,30,6[illegible]	38,12,575	18,044	—	—
6,59,441	169,20,577	5,13,620	8,41,382	182,75,579	- - -	182,75,579	- - -	1,82,75,5[illegible]	1,81,84,835	90,744	—	—
1,31,888	33,84,115	1,02,724	1,68,276	36,55,115	- - -	36,55,115	- - -	36,55,1[illegible]	36,36,967	18,148	—	—
1,32,704	39,56,035	1,06,819	1,90,672	42,53,526	- - -	42,53,526	- - -	42,53,5[illegible]	42,44,277	9,249	—	—
1,34,857	39,31,781	1,06,818	1,89,394	42,27,993	- - -	42,27,993	- - -	42,27,9[illegible]	42,23,812	3,893	288	—
1,35,485	36,35,390	1,02,610	1,78,043	39,16,043	- - -	39,16,043	- - -	39,16,0[illegible]	39,11,819	4,220	4	—
1,37,113	34,89,337	1,01,614	1,72,866	37,63,817	- - -	37,63,817	- - -	37,63,81[illegible]	37,55,985	5,895	1,937	—
1,36,647	35,94,632	1,02,463	1,76,735	38,73,830	- - -	38,73,830	- - -	38,73,83[illegible]	38,64,907	5,546	3,377	—
6,76,806	186,07,175	5,20,324	9,07,710	200,35,209	- - -	200,35,209	- - -	2,00,35,20[illegible]	2,00,00,800	28,803	5,606	—
1,35,361	37,21,435	1,04,065	1,81,542	40,07,042	- - -	40,07,042		40,07,0[illegible]	40,00,160	5,761	1,121	—
1,36,839	36,38,081	1,03,608	1,78,343	39,20,032	- - -	39,20,032	- -	39,20,03[illegible]	39,03,575	11,333	5,124	—
1,37,853	36,36,894	1,03,197	1,78,197	39,18,288	- - -	39,18,288	- -	39,18,28[illegible]	39,07,644	- - -	10,644	—
1,43,112	40,17,377	10,46,879	- -	41,64,256	- - -	41,64,256	-	41,64,25[illegible]	38,29,639	2,64,613	70,604	—
4,17,804	112,92,352	3,53,684	3,56,540	120,02,576	- - -	120,02,576	- - -	1,20,02,576	1,16,40,858	2,75,946	86,372	—
1,39,268	37,64,117	1,17,895	1,18,847	40,00,859	- - -	40,00,859	- - -	40,00,8[illegible]	38,80,086	91,982	28,798	—

(Continued on following page.)

STATEMENT of Cultivation and Revenue from all Sources in the District of *Tanjore* from

(*Continued from preceding page.*)

A. D.	FUSLY.	COLLECTION OF EXTRA SOURCES.										
		Sayer.	Salt.	Export.	[illegible]	TOTAL.	Abkarry.	Farms.	House Rent.	Loom Tax.	Stamps.	TOTAL.
		26.	27.	28.	[illegible]	30.	31.	32.	33.	34.	35.	36.
(*Continued from p. 204.*)												
1825	1235	3,91,267	2,97,511	37,[illegible]	[illegible]	77,943	42,956	19,344	- - -	10,161	53,053	8,92,235
1826	1236	3,86,328	2,81,817	51,[illegible]	46,905	97,598	41,625	16,051	- - -	10,631	46,208	8,89,258
1827	1237	4,07,412	3,03,639	31,[illegible]	42,2[illegible]	74,361	45,680	20,277	- - -	15,839	46,692	9,13,900
1828	1238	4,31,849	4,35,118	27,[illegible]	43,60[illegible]	70,477	52,060	21,333	- - -	16,844	45,786	10,73,467
1829	1239	4,14,228	4,30,429	36,[illegible]	47,0[illegible]	83,492	52,033	21,814	- - -	16,420	38,487	10,56,903
	TOTAL - - -	20,31,084	17,48,514	1,85,19[illegible]	2,18,677	4,03,871	2,34,354	98,819	- - -	69,895	2,30,226	48,16,763
	AVERAGE - - -	4,06,217	3,49,703	37,0[illegible]	43,735	80,774	46,871	19,764	- - -	13,979	46,045	9,63,353
1830	1240	3,48,622	3,82,956	45,429	43,478	88,907	50,351	22,075	- - -	16,237	42,604	9,51,752
1831	1241	3,17,192	3,78,414	45,392	39,669	85,061	49,167	22,534	- - -	16,158	50,460	9,18,986
1832	1242	3,06,790	3,83,856	33,324	37,126	70,450	51,605	21,921	- - -	16,152	42,195	8,92,969
1833	1243	3,18,840	4,17,258	29,262	31,922	61,184	55,305	22,968	19,979	15,870	43,737	9,55,141
1834	1244	3,18,697	4,08,629	37,679	32,300	69,979	63,600	22,878	20,066	15,355	47,008	9,66,212
	TOTAL - - -	16,10,141	19,71,113	1,91,086	1,84,495	3,75,581	2,70,028	1,12,376	40,045	79,772	2,26,004	46,85,060
	AVERAGE - - -	3,22,028	3,94,223	38,217	36,899	75,116	54,006	22,475	20,022	15,954	45,201	9,37,012
1835	1245	3,42,864	4,09,881	46,509	33,950	80,459	62,515	22,925	20,181	15,587	46,913	10,01,825
1836	1246	3,46,027	3,99,167	28,918	28,959	57,877	59,780	22,111	20,765	16,434	44,940	9,67,101
1837	1247	2,88,138	4,30,439	38,070	34,431	72,501	59,680	23,900	20,855	16,858	49,713	9,62,084
1838	1248	3,19,172	4,28,811	50,95[illegible]	[illegible]	94,789	57,681	25,104	20,966	17,774	58,071	10,22,368
1839	1249	3,15,809	4,33,857	56,86[illegible]	36,330	93,197	68,655	25,981	21,126	18,181	57,650	10,24,456
	TOTAL - - -	16,12,010	21,02,155	2,39,3[illegible]	1,58,[illegible]	3,98,823	2,98,311	1,20,021	1,03,893	84,834	2,57,287	49,77,334
	AVERAGE - - -	3,22,402	4,20,431	46,064	33,701	79,765	59,662	24,004	20,779	16,967	51,457	9,95,467
1840	1250	3,23,330	3,95,546	62,2[illegible]	35,810	98,047	66,200	26,208	21,309	18,533	56,378	10,05,551
1841	1251	3,27,738	3,91,198	63,[illegible]	38,591	1,01,686	66,770	25,885	21,565	18,599	51,625	10,05,066
1842	1252	3,16,707	3,81,257	43,[illegible]	71,7[illegible]	1,15,268	65,810	26,865	21,772	18,702	53,828	10,00,209
1843	1253	2,20,027	4,24,213	39,5[illegible]	64,471	1,04,014	72,430	25,992	21,917	18,217	48,894	9,31,704
1844	1254	31,603	4,63,114	29,5[illegible]	1,41,152	1,70,662	74,560	24,827	22,048	18,145	37,096	9,42,055
	TOTAL - - -	12,19,405	20,55,328	2,37,9[illegible]	3,51,690	5,89,677	3,45,770	1,29,777	1,08,611	92,196	2,43,821	47,84,585
	AVERAGE - - -	2,43,881	4,11,066	47,[illegible]	70,338	1,17,935	69,154	25,956	21,722	18,439	48,764	9,56,917
1845	1255	27,712	4,60,908	36,[illegible]	1,60,909	1,97,684	77,854	24,996	22,844	19,104	25,935	8,57,037
1846	1256	23,444	4,99,979	39,[illegible]	1,75,723	2,14,990	82,780	26,005	23,007	19,564	31,824	9,21,593
1847	1257	26,490	4,86,577	41,9[illegible]	1,48,904	1,93,948	95,100	26,960	23,225	19,981	40,413	9,12,594
1848	1258	19,855	4,66,637	48,9[illegible]	1,22,006	1,70,957	97,870	26,944	23,540	19,941	48,541	8,74,282
1849	1259	24,920	4,92,389	41,9[illegible]	1,39,935	1,81,885	1,06,895	25,795	23,804	20,124	55,554	9,31,366
	TOTAL - - -	1,22,421	24,06,490	2,11,8[illegible]	7,47,564	9,59,364	4,60,499	1,30,700	1,16,420	98,714	2,02,267	44,96,875
	AVERAGE - - -	24,484	4,81,298	42,3[illegible]	1,49,[illegible]	1,91,873	92,100	26,140	23,284	19,743	40,453	8,99,375
1850	1260	26,836	5,22,029	40,75[illegible]	[illegible]	1,88,824	1,13,520	25,938	24,982	20,198	69,240	9,91,567
1851	1261	23,122	5,27,820	46,70[illegible]	[illegible]	2,05,056	1,21,731	25,154	25,140	19,635	64,183	10,11,859
1852	1262	26,902	4,86,411	60,3[illegible]	[illegible]	1,99,974	1,00,830	25,085	25,301	19,648	63,224	9,41,375
	TOTAL - - -	76,860	15,30,260	1,47,8[illegible]	4,46,005	5,93,854	3,36,101	76,177	75,423	59,479	1,96,647	29,44,801
	AVERAGE - - -	25,620	5,10,087	49,283	[illegible]	1,97,951	1,12,034	25,392	25,141	19,826	65,549	9,81,600

Fusly 1210 to 126[illegible], with the Annual Expenditure on Irrigation and Communication—*continued.*

Total Collection, Land and Extra Sources too, or Columns 23 and 37. 37.	Average Price of Wet Land per Valey, as shown by the Sale Deeds passing through the Cutchery. 38.	Loss in Consequence of Drought. 39.	PARTICULARS OF MALAMUT. Expended on Irrigation Works. 40.	Expended on Roads and Bridges from the Government Treasury. 41.	Total of Columns [illegible] and [illegible] 42.	Expended on Roads and Bridges from the Surplus [illegible] Fund. 43	Total of [illegible] 44.	TOTAL. 45.	Navigation Works. 46.	TOTAL. 47.	48.
44,51,285	$98\frac{5}{16}$	52,571	59,196	4,908	[illegible]4,104	- - -	4,908	64,1[illegible]	- - -	64,104	Mr. John Cotton.
58,84,651	$59\frac{5}{8}$	15,740	32,983	17,751	[illegible]0,734	- -	17,751	50,7[illegible]	- - -	50,734	
37,21,113	$60\frac{5}{16}$	55,264	25,268	7,526	[illegible]2,794	- -	7,526	32,7[illegible]	- - -	32,794	Mr. A. D. Campbell.
47,61,797	$165\frac{1}{4}$	1,42,631	28,636	3,586	[illegible]2,223	- -	3,586	32,2[illegible]	- - -	32,223	
43,78,571	$84\frac{1}{4}$	1,62,723	32,880	4,247	[illegible]7,127	- -	4,247	37,[illegible]	- - -	37,127	
211,97,417	$467\frac{3}{4}$	4,28,929	1,78,964	38,018	2,[illegible]6,982	- - -	[illegible]	2,16,[illegible]	- - -	216,982	
42,39,484	$93\frac{9}{16}$	- - -	35,793	7,603	[illegible]3,39[illegible]	- - -	[illegible]	43,3[illegible]	- - -	43,396	
43,39,258	$96\frac{3}{8}$	1,50,579	81,982	9,643	[illegible]1,625	- - -	[illegible]	91,6[illegible]	- - -	91,625	
44,11,147	$108\frac{7}{8}$	1,28,515	98,640	9,969	1,[illegible]8,607	- -	[illegible]	1,08,6[illegible]7	- - -	1,08,607	
46,70,058	$84\frac{15}{16}$	99,458	1,04,497	1,759	[illegible]6,256	- -	1,759	1,06,2[illegible]	- - -	1,06,256	
48,42,108	$126\frac{1}{4}$	95,282	98,279	7,781	[illegible]6,060	14,[illegible]	[illegible]	1,20,[illegible]	- - -	1,20,189	
45,93,223	$122\frac{13}{16}$	94,116	1,13,737	342	1,[illegible]4,079	- -	342	1,14,[illegible]	- - -	1,14,079	Mr. N. Kindersley.
228,55,794	$539\frac{1}{4}$	5,67,959	4,97,135	29,492	5,[illegible]6,627	14,[illegible]	[illegible]	5,40,[illegible]56	- - -	5,40,756	
45,71,159	$107\frac{13}{16}$	- - -	99,427	5,598	1[illegible]5,325	2,8[illegible]	[illegible]	1,08,[illegible]	- - -	1,08,151	
44,73,532	$122\frac{1}{4}$	1,96,678	59,06	3,787	[illegible]2,850	- -	3,787	62,[illegible]	- - -	62,850	
46,27,667	$123\frac{9}{16}$	4,78,637	1,49,902	4,180	1,[illegible]4,172	1,[illegible]	[illegible]	1,55,[illegible]	2,983	1,58,883	
46,51,945	$130\frac{1}{2}$	57,905	85,620	21,838	1,[illegible]7,458	14,[illegible]	[illegible]	1,[illegible]	- - -	1,22,019	
48,10,877	$131\frac{7}{8}$	58,875	88,617	924	[illegible]8,341	1,8[illegible]	[illegible]	1,00,[illegible]	1,103	1,01,268	
48,27,462	$118\frac{11}{16}$	56,505	91,703	19,061	1,[illegible]0,764	1,31[illegible]	[illegible]	1,12,[illegible]	367	1,12,441	
233,61,483	$676\frac{7}{8}$	8,48,100	4,74,995	58,590	5,[illegible]3,585	19,4[illegible]	[illegible]	5,[illegible]8,0[illegible]	4,453	5,57,461	Sir H. C. Montgomery, Bart.
46,72,297	$135\frac{3}{8}$	- - -	94,999	11,718	1,[illegible]6,717	3,88[illegible]	[illegible]	1,10,[illegible]	891	1,11,492	
46,21,102	$181\frac{3}{16}$	70,671	78,096	357	[illegible]8,453	42[illegible]	77[illegible]	78,[illegible]	3,368	82,241	
45,93,440	$180\frac{3}{16}$	46,376	81,238	1,754	[illegible]2,992	23,57[illegible]	[illegible]	8,06,[illegible]	19,179	1,25,748	Sir H. C. Montgomery, Bart.
46,09,602	$171\frac{3}{16}$	99,775	97,100	7,770	1,[illegible]4,870	- -	7,7[illegible]	1,04,87[illegible]	461	1,05,331	
46,90,646	$164\frac{5}{16}$	1,20,290	93,657	1,708	[illegible]5,365	- -	1,708	95,2[illegible]	425	95,790	Mr. J. F. Bishop.
46,54,630	$173\frac{7}{8}$	1,03,746	97,868	3,280	1,[illegible]1,148	- -	3,280	1,01,1[illegible]	156	1,01,304	
229,69,420	$870\frac{3}{4}$	4,40,858	4,47,959	14,869	4[illegible]2,828	23,997	[illegible]8,866	4,86,[illegible]	23,589	5,10,414	
45,93,884	$174\frac{1}{8}$	- - -	89,591	2,974	[illegible]2,565	4,80[illegible]	[illegible]	97,[illegible]	4,718	1,02,083	Sir H. C. Montgomery, Bart.
51,01,314	- - -	70,279	1,34,724	768	1,[illegible]5,492	18,07[illegible]	18,[illegible]	1,5[illegible]66	- - -	1,53,566	
51,45,405	- - -	30,804	93,305	6,527	[illegible]9,832	9,05[illegible]	15,581	1,08,[illegible]86	2,246	1,11,132	
48,24,413	- - -	54,495	63,654	7,799	7[illegible]4,093	- -	7,799	71,[illegible]	1,636	73,089	
46,30,270	- - -	52,506	91,458	14,258	1,[illegible]5,716	16,95[illegible]	[illegible]	1,2[illegible]6	1,702	1,24,368	
47,96,273	- - -	44,821	62,027	8,794	[illegible]0,821	44,38[illegible]	53,18[illegible]	1,15,2[illegible]0	4,2[illegible]8	1,19,448	
244,97,675	- - -	2,52,905	4,45,168	38,146	4[illegible]3,314	88,467	1,[illegible],615	5,71,7[illegible]	9,822	5,81,603	
48,99,535	- - -	- - -	89,034	7,629	[illegible]6,663	17,69[illegible]	[illegible]	1,14,3[illegible]	1,964	1,16,320	Mr. J. F. Bishop.
48,95,142	- - -	51,029	1,35,495	11,844	1,[illegible]7,339	22,17[illegible]	[illegible]	1,69,5[illegible]	- - -	1,69,513	
49,19,503	- - -	78,097	1,37,901	22,059	1,[illegible]9,960	20,71[illegible]	[illegible],773	1,80,674	- - -	1,80,674	
47,70,414	$261\frac{1}{2}$	68,940	1,57,751	13,210	1,[illegible]961	11,76[illegible]	[illegible]	1,82,[illegible]	- - -	1,82,722	
145,85,059	- - -	2,06,066	4,31,147	47,113	4,[illegible],260	54,64[illegible]	1,01,762	5,3[illegible]	- - -	5,32,909	
48,61,686	- - -	68,689	1,43,716	15,704	1,[illegible]9,420	18,210	33,[illegible]	1,77,[illegible]	- - -	1,77,536	Mr. H. Forbes.

REMARKS explanatory of a STATEMENT of the REVENUES of *Tanjore* as Collected from all Sources, from Fusly 1210 to Fusly 1262.

General.

the figures in this statement differ in some respects from those entered in former nts, it is necessary to explain the difference.

the accounts formerly prepared, the revenues of the province were converted from las to rupees, by calculating that there were 24 fanams in a pagoda, and 22½ fanams rupees, the value of a pagoda having fallen from the former to the latter in fusly In the present accounts no notice has been taken of fanams, and pagodas have been rted into rupees, at 3½ of the latter to 1 of the former, whereas by the calculation e made, the pagoda was made to represent *Rs.* 3. 11. 8⅔. A change in the value of agoda was thus, in the former accounts, made to represent a difference in the state of province.

vil fees, which were to be collected from fusly 1223, were not included in the jumndy of that year, but brought forward as a balance, in the demand and collection of 1224. In the present accounts they are included in the revenues of fusly 1223, was not the case in the accounts formerly sent.

fusly 1233, the principal collector applied for leave to remit 10 per cent. of the land ue, and prepared his accounts accordingly, but the request was not acceded to by the l of Revenue; the amount, formerly entered as a balance in the accounts of fusly is now included in the revenues of fusly 1223.

e figures in the column of extra revenue will be found to differ from former accounts, nsequence of the erroneous calculation of the value of a pagoda, referred to above.

Column-war.

umn 2. The increase in the extent of land in fusly 1256, arose from the incorporaf the Tranquebar territory with the rest of the district.

umn 3. There are no accounts on record to show the gross produce of the province, usly 1210 to fusly 1215.

umns 4, 5, 6, These columns refer to the Woloongoo rent, which was introduced n fusly 1232.

umn 9. The current prices of grain from fusly 1210 to 1231 have been entered ling to old accounts; from fusly 1232 to 1254, the prices in the aumanie villages have entered, and as their number has been much reduced since that date for subsequent the gross produce of the Woloongoo rented villages has been divided by their beriz, ut deducting the 10 per cent. in high, or adding the 5 per cent. in low priced years, e result entered as the current selling rates.

umn 10. There is no account to show the extent of land under aumanie in fusly 1215 and 1216.

mn 16. Cavil fees were not collected up to fusly 1224, from that time to fusly 1261 re entered, and for fusly 1262, they have been by order of the Board of Revenue orated with the Ayen revenue.

um 21. In order that a just comparison might be made between one period and r, the following deductions have been made from the accounts of those years to which roperly belong.

The beriz of certain villages attached to the Poodoocottah state, which are entered district accounts for fusly 1210-1211 and 1212.

The beriz of some villages made over to the Muktumba Poorna Chuttrum in fusly has been deducted from previous years.

The beriz of the Karrical state has been deducted from account up to 1225.

The beriz of some villages has been deducted up to fusly 1226, when they were nged with the Rajah for some saltpans belonging to his highness.

The beriz of the Tranquebar territory has been deducted from the accounts of 211, but is added for fusly 1256, when it was permanently annexed; its amount is 20,000 rupees.

umns 23, 24. The statement of collection and remissions is up to April, fusly 1263.

mn 26. The annual amount for which land has been sold for arrears of revenue be ascertained only after much delay; a general statement has therefore been given.

umn 27. The sayer duties were abolished in fusly 1253, from that time to the date incorporation of Tranquebar, the frontier duties between that state and Karrical, Tanjore province, have been entered, and subsequent to the annexation, the frontier for Karrical only.

Column 28. Salt was sold at 80 rupees the garce from fusly 1215 to 1219, at 105 rupees from fusly 1220 to fusly 1229, at 70 rupees from fusly 1230 to fusly 1238, at 105 rupees from fusly 1239 to 1253, and at 120 rupees subsequently.

Column 34. No house tax was collected up to fusly 1222, the tax was included in the cavil fees from fusly 1223 to fusly 1242, and since has been included in moturpha.

Column 36. The stamp revenue is entered from the year of its first collection.

Column 39. The sale value of land has been entered for such years as accounts were forthcoming for; the values are taken from the deeds of agreement filed by the seller and purchaser when application is made for a new registry of the meerass.

Fusly War.

Fusly 1210. The province came under the British Government in fusly 1210, and for that year the whole district being under amaunie, the produce of the wet lands was divided in the proportion of 40 to the meerassdars and 60 to the circar; in subsequent years the division of the produce varied from 50 to 57 per cent. to the circar, according to the means of irrigation afforded to the land, until fusly 1233, when, on the introduction of the Woloongoo rent by Mr. Cotton, the produce of all irrigated lands was equally divided between the meerassdar and the circar. The extraordinary high beriz of fusly 1210 is thus accounted for, and no fair comparison can be made between it and the beriz of subsequent years, unless one-fifth be first deducted from the former on account of the 20 per cent. extra warum; its accounts include, indeed, as the accounts of all years up to fusly 1233 include, a warum of more than 50 per cent. for many villages; comparisons can hardly be accurately made with any year prior to that fusly.

Fuslies 1214, 1215, 1216. The whole of the villages were given on one year's rent in fuslies 1214, 1215, and 1216.

Fuslies 1217 to 1219. In fusly 1217 the villages were all rented for three years

Fuslies 1220 to 1224. From fusly 1220 to fusly 1224 inclusive, a five-years' rent of the villages was given, a deduction of 10 per cent. from the previous year's beriz being made in some villages.

Fusly 1230. The villages were given on rent for this year; deductions from the beriz of the previous year varying from 2 to 10 per cent. being allowed.

Fusly 1231. One year's rent, the standard grain amount, was fixed on all villages prior to the introduction of the Woloongoo settlement.

Fusly 1232. The Woloongoo beriz was fixed, and the Meerasswarum in all Neerarumbum villages settled at 50 per cent. of the gross produce

Fusly 1233. Very high prices prevailed, but produce being exceedingly scanty, large remissions were granted.

Fusly 1234. Another year of high prices.

Fuslies 1235 to 1239. A five-years' rent was given in fusly 1235, 10 per cent. being deducted from those villages which did not receive the deduction in fusly 1220.

Fuslies 1235, 1236. Two years of low prices.

Fusly 1237. Another year of low price; produce was also scanty, in consequence of a violent storm, which occurred in April of fusly 1236; the land in Tanjore never produces freely unless thoroughly baked and cracked in the land wind season.

Fusly 1238. A rise in price caused an increase of revenue in the Woloongoo rented villages. The field assessment was commenced this year, and addition was made to the beriz of some villages in consequence of extra cultivation having been discovered in the survey, and of an increased assessment having been placed on some lands.

Fuslies 1239, 1240, 1241. The field assessment was continued; heavy losses sustained by the meerassdars and the Government in consequence of drought.

Fuslies 1242, 1243, 1244. A rise in price increased the collections in the Woloongoo rented villages.

Fusly 1245. Large remissions were given in consequence of losses by drought.

Fusly 1246. Although prices were high this year, remissions were required on account of losses by drought.

Fusly 1246. The annicut was built.

Fusly 1247. A year of comparatively low prices. The effect of the annicut was felt in an increase of cultivation.

Fuslies 1248-1249. Further increase of cultivation in consequence of the construction of the annicut.

Fusly 1250. The decrease in the revenue this year arose from a fall in price; cultivation was extensive, and produce good.

Fusly 1251. In consequence of very low prices, the Collector suspended the collection of the June kist until the following year.

Fusly 1252. Prices higher than in last year, but still below the standard.

Fuslies 1253-1254. The province suffered from drought.

Fusly 1255. Prices rose. In this year Tranquebar was annexed.

Fusly 1256. A year of high prices.

Fuslies 1257-1258-1259. Three years of low prices.

Fusly 1262. Pagoda and Bramin maniems, and nat and village curnum revenues, were included in the dyen account under orders from the Board of Revenue, and added 1,79,394 rupees to the jumma.

Fusly 1262. Remissions to the extent of 5-10 and 15 per cent. were allowed according to circumstances, in consequence of heavy losses sustained in a severe hurricane which visited the province in the month of March.

Maramut.

In fusly 1240, a sluice in the grand annicut was constructed, at a cost of 17,151 rupees.

In fusly 1241, the 20-vent sluice in the Cauvery bank was built, at a cost of 20,546 rupees.

In fusly 1242 was constructed a dam across the Paumanyaur, costing 13,342 rupees.

In fusly 1243 the six-vent sluice at Peromal covil, costing 12,055 rupees, was constructed, and a road from Combaconum to Odiarpollyum made, with a bridge across the Cauvery, at an expense of 14,129 rupees.

In fusly 1244 was built the 20-vent sluice near the head of Seringham, at a cost of 17,002 rupees; the 300 yard calingulas at a cost of 5,087 rupees; the head sluice between the Cauvery and Vennaur, costing 6,631 rupees; and a dam across the Vettaur, and two rajah voikals, costing 14,086 rupees.

In fusly 1246, the upper annicut cost 83,401 rupees.

In fusly 1247, the repairs of the annicut cost 23,718 rupees, and the excavation of the south rajah voikal to the lower annicut 10,777 rupees.

In fusly 1249, the bridge and calingulah at Coilady cost 11,682 rupees, and rough stone work at the annicut 14,770 rupees.

In fusly 1251, some bridges cost 23,243 rupees.

In fusly 1253, the prolongation of the dam at the upper annicut cost 18,735 rupees.

In fusly 1255, the dam across the Cauvery at the head of Seringham cost 54,584 rupees.

In fusly 1258, four bridges cost 16,393 rupees.

In fusly 1259, seven bridges cost 43,170 rupees.

In fusly 1260, two bridges cost 20,835 rupees.

In fusly 1261 was built the Cauvery and Vennaur regulating dam, at a cost of 49,049 rupees, and also seven bridges at a cost of 30,122 rupees.

In fusly 1262, four bridges cost 6,405 rupees.

(signed) *H. Forbes,*
Collector.

5 September 1854.

STATEMENT showing the Beriz of Nunjah Lands irrigated from the supply of the Annicut, from Fusly 1240 to 1262.

	Extent.	Beriz.	Average.
	Rs. a. p.	*Rs. a. p.*	*Rs. a. p.*
Standard - - - -	97,282 - -	34,50,844 - -	35 8 11

STATEMENT showing the Beriz of Nunjah Lands irrigated from the supply of the Annicut—*continued*

ITEMS.		Fuslies.	Nunjah Land Cultivated.	Standard Beriz.	Actual Beriz	Average.		
						Extent.	Standard.	Actual
			Values.	*Rs.*	*Rs*	*Values*	*Rs.*	*Rs.*
Before the construction of the Annicut - -	From fusly 1240 to 1245	1240	82,023	28,13,987	26,31,426	—	—	—
		1241	82,318	28,24,106	27,32,126	—	—	—
		1242	84,508	28,99,240	29,98,184	—	—	—
		1243	82,548	28,31,997	31,17,291	—	—	—
		1244	85,407	29,30,082	28,40,589	—	—	—
		1245	84,682	29,05,210	26,69,023	—	—	—
		6	5,01,486	1,72,04,622	1,69,88,640	83,581	28,67,437	28,31,440
After the construction of the Annicut - - -	From fusly 1246 to 1262	1246	80,537	27,63,006	28,69,487	—	—	—
		1247	86,692	29,74,167	28,75,844	—	—	—
		1248	87,183	29,91,012	29,91,744	—	—	—
		1249	88,253	30,27,721	29.91,747	—	—	—
		1250	88,471	30,35,200	27,98,976	—	—	—
		1251	89,810	30,81,138	25,73,458	—	—	—
		1252	89,562	30,72,630	27,99,411	—	—	—
		1253	89,304	30,50,290	29 41,484	—	—	—
		1254	90,130	30,77,564	30,24,200	—	—	—
		1255	91,205	31,17,120	34,08,706	—	—	—
		1256	92,241	31,51,087	33,75,657	—	—	—
		1257	91,761	31,17,488	30,67,893	—	—	—
		1258	92,760	31,18,089	29,17,144	—	—	—
		1259	93,571	31,44,352	30,34,287	—	—	—
		1260	93,799	31,50,811	30,81,039	—	—	—
		1261	93,871	31,49,046	30,70,388	—	—	—
		1262	95,570	33,98,210	33,73,148	—	—	—
		17	15,34,720	5,24,18,927	5,11,94,613	90,277	30,83,466	30,11,448
	From fusly 1247 to 1262	1247	86,692	29,74,167	28,75,844	—	—	—
		1248	87,183	29,91,012	29 91,744	—	—	—
		1249	88,253	30,27,721	29.91,747	—	—	—
		1250	88,471	30,35,200	27,98,976	—	—	—
		1251	89,810	30,81,138	25,73,458	—	—	—
		1252	89,563	30,72,630	27,99,411	—	—	—
		1253	89,304	30,50,290	29,41 484	—	—	—
		1254	90,130	30,77,564	30,24,200	—	—	—
		1255	91,205	31,17,120	34 08,706	—	—	—
		1256	92,241	31,51,087	33,75,657	—	—	—
		1257	91,761	31,17,484	30,67,893	—	—	—
		1258	92 760	31,18,089	29,17,144	—	—	—
		1259	93,571	31,44,352	30,34,287	—	—	—
		1260	93,799	31,50,811	30,81,039	—	—	—
		1261	93,871	31,49,046	30,70,388	—	—	—
		1262	95,570	33,98,210	33,73,148	—	—	—
		16	14,54,183	4,96,55,921	4,83,25,126	90,886	31,03,495	30,20,320

PARTICULARS of the Increase in the Average of subsequent Years above that of Six Years previous to the construction of the Annicut.

	Increase			Per Centage.		
	Extent.	Standard Beriz	Actual Beriz.	Extent.	Standard Beriz.	Actual Beriz.
	Values	*Rs.*	*Rs.*	*Values.*	*Rs.*	*Rs*
Average beriz of 17 years, from fusly 1246 to 1262.	6,606	2,16,029	1,80,008	$8\frac{1}{64}$	$7\frac{17}{32}$	$6\frac{23}{64}$
Average beriz of 16 years, from fusly 1247 to 1262.	7,305	2,36,058	1,88,880	$8\frac{3}{4}$	$8\frac{15}{64}$	$6\frac{43}{64}$
Beriz of fusly 1262 - - - - -	11,989	5,30,773	5,41,708	$14\frac{11}{32}$	$18\frac{33}{64}$	$19\frac{1}{8}$

E. E.

Tanjore, 11 July 1853.

(signed) *H. Forbes*

Fuslies	Years.	Land Revenue under River Irrigation.			Total Land Revenue	Total for Ayen, including Cavil, &c.	Balance at the end of each Fusly of the Land Revenue	Remission granted in each Fusly on account of Loss.
		Nunjeh.		Total Revenue.				
		Extent	Gross Produce.					
		Vaily. a	*Cullum b*		*Rs.*	*Rs.*	*Rs.*	*Rs.*
1211 -	1801	- -	- - -	- - -	31,30,000	33,94,242	17,28,000	—
1212 -	1802	- -	- - -	- - -	26,60,000	29,22,383	14,99,000	—
1213 -	1803	- -	- - -	- - -	23,60,000	26,85,633	13,01,000	—
1214 -	1804	- -	- - -	- - -	23,30,000	35,49,632	33,000	—
1215 -	1805	- -	- - -	- - -	31,00,000	33,03,429	18,000	—
1216 -	1806	- -	- - -	- - -	28,20,000	30,04,784	99,000	—
1217 -	1807	- -	- - -	- - -	35,60,000	35,58,200	98,000	—
1218 -	1808	- -	- - -	- - -	36,00,000	36,02,561	4,10,000	—
1219 -	1809	- -	- - -	- - -	33,20,000	35,55,450	7,28,000	2,17,000
1220 -	1810	- -	- - -	- - -	30,30,000	30,74,755	1,03,000	33,000
1221 -	1811	- -	- - -	- - -	30,30,000	30,89,411	2,57,000	47,000
1222 -	1812	- -	- - -	- - -	32,70,000	33,64,778	2,54,000	43,000
1223 -	1813	- -	- - -	- - -	34,70,000	33,90,926	3,21,000	12,000
1224 -	1814	- -	- - -	- - -	34,30,000	34,66,172	2,07,000	—
1225 -	1815	- -	- - -	- - -	32,90,000	33,01,366	2,42,000	—
1226 -	1816	- -	- - -	- - -	33,30,000	- -	3,03,000	30,000
1227 -	1817	- -	- - -	- - -	32,60,000	- -	2,10,000	36,000
1228 -	1818	- -	- - -	- - -	31,00,000	- -	3,92,000	1,86,000
1229 -	1819	- -	- - -	- - -	31,00,000	- -	5,24,000	2,48,000
1230 -	1820	- -	- - -	- - -	31,70,000	- -	2,66,000	—
1231 -	1821	- -	- - -	- - -	30,60,000	- -	1,13,000	—
1232 -	1822	75,000	1,17,68,000	26,28,000	32,90,000	- -	60,000	7,000
1233 -	1823	76,000	1,20,68,000	36,89,000	*d* 43,10,000	- -	4,54,000	1,28,000
1234 -	1824	76,000	1,23,02,000	42,72,000	*d* 49,60,000	- -	1,83,000	1,05,000
1235 -	1825	78,000	1,23,00,000	28,81,000	35,60,000	- -	60,000	53,000
1236 -	1826	79,000	1,28,12,000	23,25,000	30,10,000	- -	1,12,000	16,000
1237 -	1827	78,000	1,21,41,000	21,17,000	28,00,000	- -	4,24,000	55,000
1238 -	1828	79,000	1,15,75,000	29,38,000	26,90,000	- -	5,47,000	86,000
1239 -	1829	82,000	1,20,16,000	26,57,000	33,20,000	- -	4,29,000	1,57,000
1240 -	1830	82,000	1,21,31,000	26,31,000	33,70,000	- -	3,09,000	1,47,000
1241 -	1831	83,000	1,28,17,000	27,71,000	34,90,000	- -	3,51,000	92,000
1242 -	1832	85,000	1,27,81,000	30,27,000	37,70,000	- -	1,47,000	79,000
1243 -	1833	83,000	1,22,12,000	31,17,000	38,80,000	- -	1,89,000	92,000
1244 -	1834	86,000	1,29,03,000	28,53,000	35,30,000	- -	1,12,000	91,000
1245 -	1835	84,000	1,23,50,000	26,68,000	34,68,000	- -	1,24,000	1,77,000
1246 -	1836	84,000	*c* 1,15,91,000	29,40,000	36,78,000	- -	1,42,000	4,60,000
1247 -	1837	86,000	1,37,61,000	28,84,000	37,05,000	- -	77,000	55,000
1248 -	1838	87,000	1,33,65,000	29,92,000	38,03,000	- -	37,000	56,000
1249 -	1839	88,000	1,35,29,000	29,93,000	38,12,000	- -	33,000	54,000
1250 -	1840	89,000	1,36,73,000	28,00,000	36,32,000	- -	36,000	68,000
1251 -	1841	90,000	1,38,32,000	25,74,000	34,05,000	- -	33,000	44,000
1252 -	1842	89,000	1,37,37,000	27,99,000	36,28,000	- -	1,32,000	92,000
1253 -	1843	89,000	1,35,08,000	29,42,000	37,80,000	- -	1,52,000	1,12,000
1254 -	1844	90,000	1,38,04,000	30,24,000	38,31,000	- -	66,000	91,000
1255 -	1845	91,000	1,39,56,000	34,09,000	42,54,000	- -	36,000	59,000
1256 -	1846	- -	- - -	- - -	42,28,000	- -	20,000	—
1257 -	1847	- -	- - -	- - -	39,16,000	—		
1258 -	1848	- -	- - -	- - -	37,64,000	—		
1259 -	1849	—						
1260 -	1850	—						
1261 -	1851	—						
1262 -	1852	—						
1263 -	1853	—						
1264 -	1854	—						

Fuslies.	Years.	SALT COLLECTIONS.							Sea Custom Collection.
		Exportation by Sea.		Home Consumption.		Inland Consumption.		Total Salt Revenue.	TOTAL.
		Quantity.	Amount.	Quantity	Amount.	Quantity.	Amount.	Amount.	
		Garce. e.	*Rs.*	*Garce.*	*Rs.*	*Garce.*	*Rs.*	*Rs*	*Rs.*
1211 -	1801	- -	- -	- -	- -	- -	- -	4,000	26,000
1212 -	1802	- -	- -	- -	- -	- -	- -	5,000	30,000
1213 -	1803	- -	- -	- -	- -	- -	- -	5,000	34,000
1214 -	1804	- -	- -	- -	- -	- -	- -	5,000	35,000
1215 -	1805	- -	- -	- -	- -	- -	- -	68,000	38,000
1216 -	1806	- -	- -	- -	- -	- -	- -	76,000	33,000
1217 -	1807	- -	- -	- -	- -	- -	- -	1,21,000	49,000
1218 -	1808	- -	- -	- -	- -	- -	- -	1,47,000	57,000
1219 -	1809	- -	- -	- -	- -	- -	- -	1,93,000	52,000
1220 -	1810	- -	- -	- -	- -	- -	- -	2,12,000	75,000
1221 -	1811	- -	- -	- -	- -	- -	- -	1,91,000	65,000
1222 -	1812	- -	- -	- -	- -	- -	- -	2,03,000	68,000
1223 -	1813	- -	- -	- -	- -	- -	- -	2,41,000	87,000
1224 -	1814	- -	- -	- -	- -	- -	- -	2,27,000	1,04,000
1225 -	1815	- -	- -	- -	- -	- -	- -	2,21,000	1,11,000
1226 -	1816	- -	- -	- -	- -	- -	- -	2,26,000	95,000
1227 -	1817	- -	6,000	1,000	1,57,000	1,000	57,000	2,20,000	91,000
1228 -	1818	140	14,000	2,000	1,78,000	- -	60,000	2,52,000	83,000
1229 -	1819	53	12,000	2,000	1,88,000	1,000	60,000	2,61,000	97,000
1230 -	1820	56	2,000	3,000	2,05,000	3,000	1,05,000	3,92,000	85,000
1231 -	1821	106	5,000	3,000	1,97,000	1,000	98,000	2,99,000	89,000
1232 -	1822	216	5,000	3,000	1,82,000	1,000	72,000	2,58,000	79,000
1233 -	1823	508	14,000	3,000	2,05,000	1,000	83,000	3,02,000	68,000
1234 -	1824	437	9,000	3,000	2,05,000	1,000	98,000	3,11,000	62,000
1235 -	1825	169	4,000	3,000	2,06,000	1,000	88,000	2,98,000	78,000
1236 -	1826	103	2,000	3,000	1,97,000	1,000	83,000	2,82,000	98,000
1237 -	1827	154	4,000	3,000	2,09,000	1,000	91,000	3,04,000	74,000
1238 -	1828	276	10,000	3,000	2,96,000	1,000	1,29,000	4,35,000	70,000
1239 -	1829	283	10,000	3,000	3,06,000	1,000	1,15,000	4,30,000	83,000
1240 -	1830	93	3,000	3,000	3,04,000	1,000	75,000	3,83,000	89,000
1241 -	1831	36	1,000	3,000	3,06,000	1,000	71,000	3,78,000	85,000
1242 -	1832	238	8,000	3,000	3,14,000	1,000	62,000	3,84,000	70,000
1243 -	1833	18	1,000	3,000	3,37,000	1,000	80,000	4,17,000	61,000
1244 -	1834	32	1,000	3,000	3,32,000	1,000	75,000	4,09,000	70,000
1245 -	1835	75	3,000	3,000	3,20,000	1,000	87,000	4,10,000	80.000
1246 -	1836	126	4,000	3,000	3,26,000	1,000	69,000	3,99,000	58,000
1247 -	1837	32	4,000	3,000	3,28,000	1,000	1,01,000	4,30,000	73,000
1248 -	1838	99	1,000	3,000	3,37,000	1,000	88,000	4,29,000	95,000
1249 -	1839	35	3,000	3,000	3,29,000	1,000	1,04,000	4,34,000	93,000
1250 -	1840	22	1,000	3,000	3,26,000	1,000	68,000	3,96,000	98,000
1251 -	1841	15	1,000	3,000	3,26,000	1,000	64,000	3,91,000	1,02,000
1252 -	1842	121	4,000	3,000	3,07,000	1,000	70,000	3,81,000	1,15,000
1253 -	1843	380	15,000	3,000	3,37,000	1,000	72,000	4,24,000	1,04,000
1254 -	1844	- -	- -	3,000	3,61,000	1,000	1,02,000	4,63,000	1,71,000
1255 -	1845	60	3,000	3,000	3,66,000	1,000	93,000	4,61,000	1,98,000
1256 -	1846	—							
1257 -	1847	—							
1258 -	1848	—							
1259 -	1849	—							
1260 -	1850	—							
1261 -	1851	—							
1262 -	1852	—							
1263 -	1853	—							
1264 -	1854	—							

(continued)

Fusles.	Years.	Sayer Collection or Transit of Customs Duties.	Abkary Collection or Excise.	Stamps.	Sandry Small Farms, &c.	House Tax.	Loom Tax.	Total of Extra Sources.	Total of Extra Sources, No. 18
						Total.	Total.		
		Rs.	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*
1211 -	1801	86,000	12,000	- -	20,000	- -	7,000	1,50,000	2,05,603
1212 -	1802	47,000	11,000	- -	14,000	- -	7,000	1,10,000	1,25,659
1213 -	1803	37,000	12,000	- -	10,000	- -	6,000	1,00,000	1,11,692
1214 -	1804	1,69,000	23,000	- -	6,000	- -	6,000	1,80,000	1,72,811
1215 -	1805	1,27,000	21,000	- -	5,000	- -	6,000	1,70,000	3,29,938
1216 -	1806	9,000	24,000	- -	10,000	- -	7,000	1,60,000	1,70,428
1217 -	1807	4,000	25,000	- -	8,000	- -	7,000	2,10,000	1,37,407
1218 -	1808	1,16,000	30,000	- -	22,000	- -	7,000	3,80,000	2,95,965
1219 -	1809	1,76,000	33,000	37,000	15,000	- -	7,000	5,10,000	3,97,851
1220 -	1810	1,85,000	30,000	30,000	16,000	- -	8,000	5,60,000	4,33,009
1221 -	1811	1,71,000	33,000	24,000	16,000	- -	8,000	5,10,000	4,00,891
1222 -	1812	1,92,000	31,000	26,000	11,000	- -	10,000	5,40,000	4,20,151
1223 -	1813	2,14,000	29,000	33,000	13,000	- -	9,000	6,30,000	—
1224 -	1814	2,23,000	29,000	47,000	12,000	- -	9,000	6,50,000	—
1225 -	1815	2,29,000	29,000	48,000	15,000	- -	9,000	6,60,000	—
1226 -	1816	2,35,000	31,000	43,000	16,000	- -	9,000	6,50,000	—
1227 -	1817	2,40,000	33,000	39,000	16,000	- -	10,000	6,50,000	—
1228 -	1818	2,63,000	34,000	40,000	19,000	- -	10,000	7,00,000	—
1229 -	1819	2,82,000	36,000	43,000	18,000	- -	10,000	7,50,000	—
1230 -	1820	3,14,000	41,000	49,000	19,000	- -	11,000	9,10,000	—
1231 -	1821	3,53,000	42,000	54,000	17,000	- -	11,000	8,60,000	—
1232 -	1822	3,58,000	46,000	56,000	21,000	- -	11,000	8,30,000	—
1233 -	1823	3,80,000	45,000	59,000	13,000	- -	11,000	8,90,000	—
1234 -	1824	4,04,000	46,000	67,000	19,000	- -	11,000	9,20,000	—
1235 -	1825	3,01,000	43,000	53,000	19,000	- -	10,000	8,90,000	—
1236 -	1826	3,86,000	42,000	46,000	16,000	- -	11,000	8,80,000	—
1237 -	1827	4,10,000	46,000	47,000	20,000	- -	16,000	8,10,000	—
1238 -	1828	4,32,000	52,000	46,000	21,000	- -	17,000	10,70,000	—
1239 -	1829	4,14,000	55,000	38,000	22,000	- -	16,000	10,40,000	—
1240 -	1830	3,49,000	50,000	43,000	22,000	- -	16,000	9,50,000	—
1241 -	1831	3,17,000	49,000	50,000	23,000	- -	16,000	9,20,000	—
1242 -	1832	3,07,000	52,000	42,000	22,000	- -	16,000	8,93,000	—
1243 -	1833	3,19,000	55,000	44,000	23,000	18,000	16,000	6,50,000	—
1244 -	1834	3,19,000	64,000	47,000	23,000	20,000	15,000	9,68,000	—
1245 -	1835	3,43,000	63,000	47,000	23,000	20,000	16,000	9,84,000	—
1246 -	1636	3,48,000	60,000	45,000	23,000	21,000	16,000	9,70,000	—
1247 -	1837	2,88,000	60,000	50,000	24,000	21,000	17,000	9,62,000	—
1248 -	1838	3,19,000	58,000	58,000	25,000	21,000	18,000	10,22,000	—
1249 -	1839	3,18,000	59,000	58,000	26,000	21,000	18,000	10,24,000	—
1250 -	1840	3,23,000	66,000	56,000	26,000	21,000	19,000	10,06,000	—
1251 -	1841	3,28,000	67,000	52,000	26,000	22,000	19,000	10,05,000	—
1252 -	1842	3,17,000	66,000	54,000	27,000	22,000	19,000	10,00,000	—
1253 -	1843	3,20,000	72,000	45,000	26,000	22,000	18,000	9,32,000	—
1254 -	1844	32,000	75,000	37,000	25,000	22,000	18,000	8,42,000	—
1255 -	1845	28,000	78,000	26,000	26,000	23,000	19,000	8,58,000	—
1256 -	1846	—							
1257 -	1847	—							
1258 -	1848	—							
1259 -	1849	—							
1260 -	1850	—							
1261 -	1851	—							
1262 -	1852	—							
1263 -	1853	—							
1264 -	1854	—							

Fuslies.	Years.	MARAMUT CHARGES.											
		Whole of the Maramut of Irrigation for the District.				New Works					Average of each Five Years	Charges incurred in the Repair and Construction of Roads, Bridges and Ghauts.	Irrigation Expenditure
		Ordinary	Extraordinary	Occasional.	TOTAL.	Head of Surungbum.	Upper Annicut	Lower Annicut.	Cunnigulah Sluice, &c, connected with Annicut	TOTAL.			
		Rs	*Rs.*	*Rs*	*Rs.*	*Rs*	*Rs.*	*Rs.*	*Rs.*	*Rs*	*Rs*	*Rs.*	*Rs*
1211	1801	-	-	-	-	-	-	-	-	1,68,000	1,21,000	—	
1212	1802	-	-	-	-	-	-	-	-	1,29,000			
1213	1803	-	-	-	-	-	-	-	-	1,09,000			
1214	1804	-	-	-	-	-	-	-	-	93,000			
1215	1805	-	-	-	-	-	-	-	-	1,08,000			
1216	1806	-	-	-	-	-	-	-	-	1,17,000	58,000	—	
1217	1807	-	-	-	-	-	-	-	-	75,000			
1218	1808	-	-	-	-	-	-	-	-	38,000			
1219	1809	-	-	-	-	-	-	-	-	32,000			
1220	1810	-	-	-	-	-	-	-	-	88,000			
1221	1811	-	-	-	-	-	-	-	-	55,000	83,000	—	
1222	1812	-	-	-	-	-	-	-	-	90,000			
1223	1813	-	-	-	-	-	-	-	-	1,02,000			
1224	1814	-	-	-	-	-	-	-	-	74,000			
1225	1815	-	-	-	-	-	-	-	-	94,000			
1226	1816	-	-	-	-	-	-	-	-	77,000	76,000	—	
1227	1817	-	-	-	-	-	-	-	-	46,000			
1228	1818	-	-	-	-	-	-	-	-	77,000			
1229	1819	-	-	-	-	-	-	-	-	1,30,000			
1230	1820	-	-	-	-	-	-	-	-	51,000			
1231	1821	-	-	-	-	-	-	-	-	52,000	58,000	—	
1232	1822	-	-	-	-	-	-	-	-	54,000			
1233	1823	-	-	-	-	-	-	-	-	66,000			
1234	1824	-	-	-	-	-	-	-	-	58,000			
1235	1825	-	-	-	-	-	-	-	-	60 000			
1236	1826	-	-	-	-	-	-	-	-	33,000	40,000	17,752	—
1237	1827	11,000	1,000	-	25,000	-	-	-	-	25,000		7,527	—
1238	1828	22,000	3,000	4,000	29,000	-	-	-	-	28,000		3 675	—
1239	1829	27,000	3,000	2,000	33,000	-	-	-	-	33,000		4,381	—
1240	1830	55,000	4,000	25,000	1,83,000	-	-	-	-	83,000		9,775	—
1241	1831	69,000	7,000	25,000	1,01,000	-	-	-	-	1,00,000	1,15,000	9,559	—
1242	1832	67,000	14,000	24,000	1,05,000	-	-	-	-	1,05,000		1,202	—
1243	1833	74,000	3,000	23,000	1,00,000	-	-	-	-	1,00,000		7,803	1,12 196
1244	1834	54,000	7,000	53,000	1,14,000	-	-	-	-	1,14,000		342	1,20,608
1245	1835	37,000	4,000	18,000	1,60,000	-	-	-	-	59,000		3,761	68,793
1246	1836	54,000	4,000	9,000	68,000	84	85,000	-	-	1,54,000	1,17,000	4,136	1,63,120
1247	1837	25,000	4,000	19,000	48,000	1,000	85,000	-	12,000	1,47,000		22,267	92 906
1248	1838	42,000	2,000	6 000	50,000	390	25,000	26,000	5,000	1,06,000		11,331	1,06 446
1249	1839	53,000	2,000	2,000	57,000	4,000	10,000	5,000	17,000	93,000		26,937	1,15,882
1250	1840	54,000	7,000	2,000	64,000	6,000	6,000	8,000	2,000	86,000		1,010	98,032
1251	1841	69,000	3,000	25,000	97,000	5,000	2,000	2,000	3,000	1,09,000	1,11,000	2,236	87,811
1252	1842	66,000	5,000	27,000	98,000	6,000	1,000	4,000	4,000	1,13,000		8 196	1,04,446
1253	1843	47,000	6,000	8 000	62,000	1,000	21,000	2,000	9,000	94,000		2,000	1,01,070
1254	1844	65,000	8,000	9 000	83,000	147	15,000	1,000	1,000	1,00,000		3,094	1,05,582
1255	1845	51,000	20,000	3,000	74,000	2,000	58,000	2,000	3,000	1,39,000		1,432	1,40,959
1256	1846	-	-	-	-	-	-	-	-	-	-	13,543	95,309
1257	1847	-	-	-	-	-	-	-	-	-	-	8,549	70,143
1258	1848	-	-	-	-	-	-	-	-	-	-	18,185	95,710
1259	1849	-	-	-	-	-	-	-	-	-	-	12,280	65,317
1260	1850	-	-	-	-	-	-	-	-	-	-	500	94,546
1261	1851	-	-	-	-	-	-	-	-	-	-	-	1,25,826
1262	1852	-	-	-	-	-	-	-	-	-	-	-	1,07,726
1263	1853	—											
1264	1854	—											

(continued)

Fuslies	Years.	Maramut Expenditure taken from Appendix S. First Report of P. W. C.	Taken from Appendix V. First Report of P. W. C.	GROSS PRODUCE Of each Year.	Average of each Five Years.	Increase of Average of each Five Years over preceding.	Fluctuation in each Period of Five Years	Population
		Rs.		*Cullums*	*Cullums.*	*Cullums.*	*Cullums.*	*Number.*
1211 -	1801	- - -	- -	1,09,00,000	89,00,000	- - -	47 lacs or 43 per cent.	—
1212 -	1802	- - -	- -	62,00,000				
1213 -	1803	- - -	- -	74,00,000				
1214 -	1804	- - -	- -	97,00,000				
1215 -	1805	- - -	- -	1,08,00,000				
1216 -	1806	- - -	- -	83,08,000	1,00,00,000	11,00,000	26 lacs or 22 per cent.	—
1217 -	1807	- - -	- -	1,07,00,000				
1218 -	1808	- - -	- -	1,09,00,000				
1219 -	1809	- - -	- -	1,08,00,000				
1220 -	1810	- - -	- -	98,00,000				
1221 -	1811	- - -	- -	98,00,000	1,10,00,000	10,00,000	16 lacs or 13 per cent.	—
1222 -	1812	- - -	- -	1,11,00,000				
1223 -	1813	- - -	- -	1,14,00,000				
1224 -	1814	- - -	- -	1,16,00,000				
1225 -	1815	- - -	- -	1,10,00,000				
1226 -	1816	- - -	- -	1,05,00,000	1,09,00,000	- - -	8 lacs or 7 per cent.	—
1227 -	1817	- - -	- -	1,10,00,000				
1228 -	1818	- - -	- -	1,09,00,000				
1229 -	1819	- - -	- -	1,11,00,000				
1230 -	1820	- - -	- -	1,13,00,000				
1231 -	1821	52,512	- -	1,06,00,000	1,17,00,000	8,00,000	17 lacs or 14 per cent.	—
1232 -	1822	54,206	- -	1,17,68,000				
1233 -	1823	66,376	- -	1,20,68,000				
1234 -	1824	57,903	- -	1,23,02,000				
1235 -	1825	59,196	- -	1,23,00,000				
1236 -	1826	32,983	- -	1,28,12,000	1,21,00,000	4,00,000	12½ lacs or 10 per cent.	11,29,000
1237 -	1827	25,268	- -	1,21,41,000				
1238 -	1828	28,637	- -	1,15,75,000				
1239 -	1829	32,881	- -	1,20,16,000				
1240 -	1830	81,982	- -	1,21,31,000				
1241 -	1831	98,640	- -	1,28,17,000	1,26,00,000	5,00,000	7 lacs or 5½ per cent.	—
1242 -	1832	1,04,497	- -	1,27,81,000				
1243 -	1833	98,279	- -	1,22,12,000				
1244 -	1834	1,13,736	- -	1,29,03,000				
1245 -	1835	59,063	- -	1,23,50,000				
1246 -	1836	1,49,992	- -	1,15,91,000	1,32,00,000	6,00,000	22 lacs or 16½ per cent.	11,66,000
1247 -	1837	85,620	- -	1,37,61,000				
1248 -	1838	88,617	- -	1,33,65,000				
1249 -	1839	91,703	- -	1,35,29,000				
1250 -	1840	78,096	- -	1,36,73,000				
1251 -	1841	81,239	- -	1,38,32,000	1,37,00,000	5,00,000	4½ lacs or 3½ per cent.	—
1252 -	1842	97,100	- -	1,37,37,000				
1253 -	1843	93,657	- -	1,35,08,000				
1254 -	1844	97,868	- -	1,38,04,000				
1255 -	1845	1,34,723	- -	1,39,56,000				
1256 -	1846	93,305	—					
1257 -	1847	63,635	—					
1258 -	1848	91,458	—					
1259 -	1849	62,027	—					
1260 -	1850	1,00,198	—					
1261 -	1851	—						
1262 -	1852	—						
1263 -	1853	—						
1264 -	1854	—						

Fuslies.	Years.	Exportation by Sea.		Total of Land Revenue and extra Sources.	Revenue.	
		Grain.	Amount.		Average Total Collection of each Five Years.	Increase of Average of each Five Years over Preceding.
		Garce.	*Rs.*	*Rs.*	*Rs.*	*Rs.*
1211 -	1801 -	- - -	- - -	33,40,000		
1212 -	1802 -	- - -	- - -	28,60,000		
1213 -	1803 -	- - -	- - -	26,20,000		
1214 -	1804 -	- - -	- - -	35,10,000		
1215 -	1805 -	- - -	- - -	33,70,000	31,40,000	—
1216 -	1806 -	- - -	- - -	29,80,000		
1217 -	1807 -	- - -	- - -	37,70,000		
1218 -	1808 -	- - -	- - -	39,80,000		
1219 -	1809 -	- - -	- - -	40,60,000		
1220 -	1810 -	- - -	- - -	36,70,000	37,00,000	5,60,000
1221 -	1811 -	- -	- - -	36,00,000		
1222 -	1812 -	- - -	- - -	39,10,000		
1223 -	1813 -	- - -	- - -	42,00,000		
1224 -	1814 -	- - -	- - -	41,20,000		
1225 -	1815 -	- - -	- - -	39,60,000	39,50,000	2,50,000
1226 -	1816 -	- - -	- - -	40,40,000		
1227 -	1817 -	- - -	- - -	39,60,000		
1228 -	1818 -	19,56,000	14,54,000	40,00,000		
1229 -	1819 -	17,67,000	12,99,000	41,10,000		
1230 -	1820 -	17,17,000	11,73,000	40,80,000	40,40,000	90,000
1231 -	1821 -	20,88,000	11,64,000	39,30,000		
1232 -	1822 -	16,00,000	9,70,000	41,30,000		
1233 -	1823 -	23,01,000	13,08,000	*d* 53,40,000		
1234 -	1824 -	16,14,000	9,18,000	*d* 60,00,000		
1235 -	1825 -	19,96,000	10,48,000	44,50,000	*f* 47,70,000	7,30,000
1236 -	1826 -	24,91,000	14,07,000	38,90,000		
1237 -	1827 -	13,78,000	7,63,000	37,30,000		
1238 -	1828 -	11,00,000	6,17,000	47,90,000		
1239 -	1829 -	16,87,000	9,83,000	44,20,000		
1240 -	1830 -	19,16,000	11,49,000	43,70,000	42,40,000	—
1241 -	1831 -	22,34,000	13,12,000	44,40,000		
1242 -	1832 -	33,54,000	20,17,000	46,90,000		
1243 -	1833 -	24,04,000	14,86,000	48,77,000		
1244 -	1834 -	17,74,000	10,55,000	46,07,000		
1245 -	1835 -	18,61,000	11,23,000	44,69,000	46,10,000	3,70,000
1246 -	1836 -	12,43,000	7,37,000	46,47,000		
1247 -	1837 -	17,07,000	10,22,000	46,67,000		
1248 -	1838 -	25,24,000	16,60,000	48,26,000		
1249 -	1839 -	25,08,000	15,15,000	48,43,000		
1250 -	1840 -	27,37,000	14,71,000	46,38,000	47,20,000	1,10,000
1251 -	1841 -	28,55,000	17,04,000	44,10,000		
1252 -	1842 -	32,26,000	19,26,000	46,28,000		
1253 -	1843 -	27,11,000	16,11,000	47,11,000		
1254 -	1844 -	34,74,000	18,24,000	46,73,000		
1255 -	1845 -	36,94,000	26,27,000	51,11,000	*g* 47,80,000	60,000
1256 -	1846 -	- - -	- - -	51,50,000		
1257 -	1847 -	—				
1258 -	1848 -	—				
1259 -	1849 -	—				
1260 -	1850 -	—				
1261 -	1851 -	—				
1262 -	1852 -	—				
1263 -	1853 -	—				
1264 -	1854 -	—				

(Revenue Department.)

(No. 84.)

From *J. Goldingham*, Esq., Commissioner, Northern Circars, to *J. D. Bourdillon*, Esq., Secretary to Government, Fort Saint George.

Sir,

From Rajahmundry, 29th July 1854, one enclosure
From ditto, 23d Sept 14 enclosures.
Memo. from Mr. Stokes, with one accompaniment on Guntoor and the Kistnah Annicut
Herewith returned

Para. 1. I HAVE the honour to acknowledge the receipt of Extract Minutes of Consultation, dated 26th April 1855, together with the documents mentioned in the margin, calling for information connected with the Godavery Annicut. It is the wish of Government that the effects of this great work should be accurately ascertained. Both present and prospective benefits are to be stated, and information is required as to the practicability of substituting one uniform rate per acre or other extent as the charge for water, for a tax calculated on the crop, ordered to be introduced only as a temporary expedient till the assessment generally can be remodelled

2. Among the documents received from Government, mentioned in the margin of the preceding para., is a paper showing the revenue, past and present, of the Guntoor district, and the bearing of the Kistna Annicut on its prosperity, and it is the desire of Government that similar information may be obtained from Masulipatam from the Collector of that district.

Preliminary remarks

3 Before noticing actual results in illustration of the question, a few preliminary remarks will not be out of place. The works under discussion are the Godavery and Kistna Annicuts. Rajahmundry is affected by the Godavery Annicut alone, Guntoor by the Kistna work, and Masulipatam by both. In Masulipatam the revenue maintained by irrigation is considerable, but in the other two districts the bulk of the Government assessment is derived from unirrigated lands. The irrigation of the watered portion in all three districts is defective and uncertain. Inundations from the overflowing of the Godavery and Kistna occasionally occur, chiefly in Rajahmundry and Guntoor, rendering large remissions of revenue necessary, and causing serious injury to the country in the destruction of produce and agricultural stock, as well as general loss, replaced only after a lapse of years. With a rich soil, a comparatively better supply of water, and more certain harvests, Rajahmundry is in much better circumstances than either Guntoor or Masulipatam. It contains about a million inhabitants, the population of each of the other two districts being little more than half that number. It has also more large towns, but this prosperity is comparative only, and falls short of what may be looked for, when an assessment on sound principles, a matured state of the annicut irrigation and extension of water carriage, with improved communications generally, shall combine, under the Divine blessing, to develop its resources.

Report, para. 257.

4. The district, viewed in comparison with Tanjore, drew forth the following remark from the Madras Public Works Commissioners: "While Tanjore, under the beneficial effects of the lately constructed annicuts, was paying with ease a revenue of 45 lacs, and annually increasing in wealth, Rajahmundry, of similar extent, with a far more fertile soil, and inferior in no one natural advantage, was paying with extreme difficulty a revenue of 19 lacs, and its people were in the lowest state of poverty." Mismanagement under the zemindars, a severe famine followed by disease, occurring when the ryots were impoverished from exactions under zemindary rule, and an inefficient state of the irrigation, had operated in reducing the revenue in Guntoor and Masulipatam. In both these districts a revival has taken place, remarkably so in Guntoor, though the revenue is still much below its normal amount.

5. No. 1 of the Appendix will be found to give fuller information regarding the population of these three districts, with a classification of the villages in two of them, viz., Rajahmundry and Masulipatam, with reference to the number of inhabitants they contain.

6. The extent of unoccupied cultivable land is less in Rajahmundry than in Masulipatam and Guntoor, but a fair comparison cannot be instituted from the annual accounts, because when joint rents prevail, the village area for the most part is included in the lease, while in the ryotwar district of Guntoor it is only

land actually occupied and paid for that is entered in the settlement. Still it is apparent, that of the three districts, Rajahmundry is the most highly cultivated. According to the settlement account of fusly 1263 A.D. 1853-54, the following is the extent of the cultivable area which is unoccupied

	UNOCCUPIED.	CENTAGE.	
	Acres	*Ac.*	*C*
Rajahmundry - - - -	53,407	7	20
Masulipatam - - - -	2,04,876	27	20
Guntoor - - - - -	5,27,957	48	0

7. Portions of the above land in Masulipatam and Guntoor may be brought under wet cultivation with the waters of the two rivers, but that in Rajahmundry, 4,700 acres excepted, is not within range of the new works. The lands of the Rajahmundry Delta talooks, though fully occupied, with the above exception, are not fully cultivated.

Delta Talooks

	Acres
Land occupied - - -	2,75,000
Of which, not cultivated, but paid for - -	50,000

8 The large extent of unoccupied land in Masulipatam and Guntoor is an indication of impoverishment Latterly some lands have been relinquished in the last-mentioned district, partly owing to heavy losses occasioned by the inundations of the Kistna, and partly in consequence of burdensome rates of assessment on the best soils in certain talooks This question is under consideration, and it is hoped that the necessary relief will be soon given where land is found to be waste in consequence of excessive assessment

Extracts Minutes Consultation, 27th August 1853, reviewing the settlement of fusly 1261.
To Government, 18th January 1855
From Government, 2d June

9. It has been observed in a former para., that the revenue from wet lands in Masulipatam was considerable, but that the bulk of the revenue in the other two districts was drawn from lands not irrigated Keeping revenue in view, the proportion of irrigated to unirrigated in Rajahmundry is 35 per cent, in Masulipatam 49 per cent, and in Guntoor it is only 16 per cent The first effect of the works under construction will be to render the greater portion of this revenue permanent, by making the irrigation certain, an important result under any circumstance, but particularly so in a district like Masulipatam, where 49 per cent. of the land revenue is drawn from irrigated lands All further direct increase will depend on the extension of products, requiring irrigation over the unirrigated area.

Per-centage of Irrigated Land

	Land	Assessment
Rajahmundry - -	21	35
Masulipatam - -	22	49
Guntoer - - -	5	16

10. In Rajahmundry, where the irrigation is more advanced than in the other two districts, the assessment of the irrigated lands is, as stated above, 35 per cent. of the entire revenue from the land. Of this, 15 per cent., which has hitherto had an imperfect and uncertain supply of water, has already come under the certain provision afforded by the Godavery Annicut, and of the remainder, about 10 per cent. is being brought gradually under the same influence. Ten per cent., or 1,35,000 rupees, is dependent on sources unconnected with he annicut.

11. The assessment in Rajahmundry, as shown in the accounts under the present system of joint rents, presents the anomaly of a want of distinction between unirrigated and irrigated. The rates for both kinds are nearly the same, while the proportion generally borne by the latter to the former in other districts is as two to one.

	Per Acre	
Unirrigated - - -	*Rs* 3	1
Irrigated - - - -		
Annicut - - - -	3	11
Tanks - - - - -	3	9
Channels - - - -	4	-
Wells - - - - -	6	15
Falling rains - - -	2	15

12. It is further to be observed, that the unirrigated rates in this district are higher than those in Masulipatam and Guntoor. In accounting for this, something must be set down for inaccuracies in the area as recorded in the village accounts, and to the fact that more than one-fourth of the lands in Rajahmundry, from fineness of quality, bears a second crop. But making due allowance on these accounts, it

	Per Acre.	
Rajahmundry - -	*Rs* 3	1
Masulipatam - - -	1	-
Guntoor - - -	1	11

is supposed that the rates of assessment of unirrigated lands in Rajahmundry is disproportionately high. In a revision of the assessment, some adjustment will be made on account of the second dry crop, as is done in other districts where it is not included in the assessment, and then a greater approximation of rates in the three districts will follow.

See Statement, No. 8, in the Appendix.

13. It must not be overlooked that while the land assessment in Rajahmundry is higher than in the other two districts, the market prices of produce are lower there.

14. It is important to bear these facts in view, because while, on the one hand, an improved irrigation will lead to an augmentation of the revenue, such increase cannot be calculated implicitly on the basis of the present demand, as this, apart from the consideration of the effect likely to be produced by increased supplies of grain being brought into the market, must undergo great modification and some diminution when the assessment is remodelled.

15. Appendix No. 2 elucidates in a tabular form what has been stated above in regard to the proportion of irrigated and unirrigated lands in occupation and the ratios of assessment. The particulars apply to fusly 1263 (1853-54). It is not to be supposed that the whole of the unirrigated extent is actually under the plough: a portion is always retained for pasture, and some lands were left uncultivated in consequence of the poverty of the holders.

16. The following Table exhibits for lands not irrigated the proportions according to which the different grains are grown. The extent of land of this description which is not cultivated is added:

	Rajahmundry.	Masulipatum.	Guntoor.
	Acres.	*Acres.*	*Acres.*
Coarse paddy - - - - - - - -	1,63,954	37,457	71,457
Cholum - - - - - - - - -	24,000	80,000	97,486
Sundry grain - - - - - - - -	30,552	80,629	3,67,620
	2,18,508	1,98,086	5,34,563
Land not cultivated - - - - - -	86,083	2,10,081	1,26,681
TOTAL of land not irrigated in occupation - -	3,04,591	4,08,167	6,63,244

17. The result of an improved irrigation will be the gradual substitution of fine descriptions of paddy for the coarse kind.

18. One important effect of a large outlay on public works in a district is an increased demand which is thereby created for its products; a stimulus is thus given to cultivation, and the ryot pays his rent more easily. Such outlays of money bear directly on the general prosperity. This has been extensively felt in Rajahmundry in connexion with the outlay on account of the annicut. The direct profit to Government from this expenditure will consist in the stability given to a fluctuating revenue, in the saving of remissions of assessment for losses in consequence of inundation, and in the water tax to be imposed when water is required for improving an imperfect irrigation, or when dry lands are brought under the irrigated class.

Actual results.

19. With these preliminary remarks, it is proper to proceed to a consideration of results, past and present, and the expectations held out for the future. The comparison will be instituted for the three districts, because as an increase is observable in all, it is important to distinguish the agencies that have been in operation. In Rajahmundry alone, as before observed, have the improvements in the irrigation been in any material degree advanced.

20. The highest land revenue collection in Rajahmundry, for upwards of 40 years before the construction of the Godavery works, may be stated in round numbers at 19,00,000 rupees. It was generally much below that amount, and four times only above it, and then in an immaterial degree. In the interval between 1832-33 and 1843-44 the revenue declined considerably; subsequently it revived, went on speedily improving from 1847-48 to 1853-54, and at present amounts to about 20,20,000 rupees, being an increase of 1,30,000 rupees above the normal standard, supposing the latter to be represented by 19,00,000 rupees.

		Rs
Fusly	1257 / 1847-58	18,73,449
„	1258	19,28,903
„	1259	18,91,254
„	1260	19,72,851
„	1261	20,25,310
„	1262	20,22,465
„	1263 / 1853-54	20,18,[illegible]

21 It seems, however, proper to glance at the actual collections of five years before the outlay for the annicut with those for the seven years subsequently. Taking, then, the average revenue for both periods, it is seen that the latter exceeds the former by 2,89,130 rupees, which, multiplied by seven for the seven years, gives an aggregate increase of 20,23,910 rupees for this period.

Note —Five previous years are taken for convenience the average of 7 years, or 16,19,088 rupees, would include years of great depression

	Rs
Average of 5 years, from fusly 1252 to fusly 1256	16,72,695
Ditto of 7 years, from fusly 1257 to fusly 1263	19,61,825
Ditto increase of the latter period	2,89,130

22 Instituting a similar comparison for the revenue from extra sources, an increase of 3,05,305 rupees is obtained for the seven years under notice, which added to 20,23,910 rupees, the increase from the land, gives a total increase of 23,29,215 rupees. Appendix No. 3 will illustrate these results more in detail.

	Rs
Average of 5 years	3,25,196
Ditto of 7 years	3,68,811
	43,615
Years	7
Rs	3,05,305

23 The whole of this great increase is not to be ascribed to the operations of the annicut, and the outlay connected with it, for on reference to Appendix No. 3, mentioned in the preceding para., it will be seen that, following the same mode of calculation as above, there is an increase for the seven years in both Masulipatam and Guntoor, amounting respectively to 2,46,365 rupees and 27,22,325 rupees. The increase in Masulipatam is composed of an increase under land, and a decrease under extra sources of revenue; and in Guntoor the increase is swelled in consequence of large sales of salt; taking land revenue only, the gain to Government for the seven years in question will stand thus:

Rajahmundry	20,23,910 rupees.
Masulipatam	6,03,484 „
Guntoor	19,79,817 „

24. The increase in Rajahmundry and Guntoor is ascribable primarily to special inquiries instituted in those districts under the orders of Government, and to the reforms which followed. In Guntoor, where there has been no outlay on account of public works till lately, the money gain to Government is almost equal to that obtained in Rajahmundry; but this very favourable financial result is to be traced to previous deficiencies of revenue, which would be replaced on a better system of management being introduced, aided by the successful administration of a Collector of great revenue experience, whose first object on the zemindaries falling in, and thus coming fully under his control, was to obtain correct field registers, showing the extent and assessment of each field or parcel of land. On these his settlements with the ryots were based, each ryot being at liberty to occupy or relinquish land as he pleased. To this system, viz. a defined rent on each field, and freedom of action in a depressed state of the district, the consequence of zemindary misrule and famine, and where a long-continued waste of the resources had to be repaired, is to be attributed the marked progress above indicated; but the improvement, though great, has not brought up the revenue to its normal* standard; and in some localities, as already stated, considerable depression is still apparent. In Rajahmundry alone has the ordinary standard of the land revenue been exceeded, although in some parts of the district the revenue is still below the assets computed at the permanent settlement. The fact that the normal revenue has been surpassed in Rajahmundry alone is, *primâ facie*, indicative of

In Rajahmundry, by Sir H C Montgomery, in 1843-44.

In Guntoor, by Mr Walter Elliot, in 1845.

Mr. H Stokes.

Note —I state this from personal observation, and a conviction that the same results would not have followed a system of village rents

	Rs
Average of 10 years from fusly 1232 to fusly 1241, the last-mentioned fusly being very unfavourable,	14,16,463
1261	13,90,050
1262	13,80,313
1263	13,55,821

* This has been noticed by Government in reviewing the settlement of fusly 1262.

Extracts Minutes Consultation 6th November 1854, para. 28.

Extracts Minutes Consultation to Government, reporting on the settlement of fusly 1263, 5th May 1855, para. 35

of the existence of a new class of agencies bearing directly on the capabilities of the district.

To Government, 5th May 1855.

25. Appendix (A.) of the general report for fusly 1263 (1853-54) was intended to exhibit the effects of the new works on the revenue, and the general resources of the country. It has been drawn up with care, and may be referred to in the present place as containing the information called for by Government. It was there shown, that of the three main channels, viz. the Toolia Bhaga, the Ryaly, and the Vizaiswaram or Weyoor, the first had been more or less available for irrigation since fusly 1257 (1847-48); that the two latter had not materially contributed to the revenue up to fusly 1262 (1852-53); that, to inspire confidence in the works, it had been determined that the water cess should not be imposed till the benefit of the irrigation had been enjoyed for two successive seasons; that one-half only of the water-rate was to be imposed in the third year and the full amount in the fourth; that this indulgence would necessarily put off the returns to Government, and that the assessment under the present system of settlement could be fixed on approximate data only. Two statements were appended, one showing the revenue of villages under the Toolia Bhaga, and the other the profits derived by Government from the new works. Copies of these statements form Nos. 4 and 5 of the Appendix to this letter.

26. No. 4 exhibits the average for five years before the commencement of the annicut, and that for fuslies 1262 (1852-53), and 1263 (1853-54), with the number of villages enjoying the benefits of the irrigation and the period when water was first received in the several villages respectively. The following facts are established by this statement:

i. In 45 Government villages irrigated during periods ranging from one to six years, there was an increase of 52,099 rupees, or 62 per cent., in the revenue of fusly 1263 (1853-54), compared with the average of five years before the commencement of the work.

ii In 23 villages which have had the water for five years, the increase on the same comparison is 35,077 rupees, or about 90 per cent.

iii. The ratio of increase in 97 Government villages of the same talooks, not brought under irrigation, is 37 per cent.

iv In 25 villages of the zemindary of Pittapore under the Collector's management, similar results are observable, viz., an increase of 38 per cent. on the whole 25 villages, and of 87 per cent. where the irrigation has been in operation six years.

v. The advantages are in proportion to the period the water has been used, and in five villages of the Biccavole talook, the particulars of which are given in the statement, the present revenue is twice and three times the former amount.

27. In both the irrigated and unirrigated villages the revenue has gradually increased, the result of fusly 1263 (1853-54) being higher than that of fusly 1262 (1852-53). The unirrigated villages are benefited by the outlay and demand for their products. In both descriptions of villages the Government demand is regulated, in the absence of field registers, by an addition to the former year's settlement, on a general consideration of their increased resources, which is afterwards apportioned by the ryots among themselves.

28 It must be borne in mind that till fusly 1263 (1853-54), the irrigation was confined to the Toolia Bhaga, and that returns of revenue have been delayed in consequence of the channels not having been proceeded with simultaneously with the annicut, as originally projected. Two years may be said to have been lost by this deviation from Colonel Cotton's intention.

29 The other statement or No. 5 of the Appendix exhibits the profits to Government in respect of the land assessment of the area actually watered. The 45 irrigated villages under the Toolia Bhaga are therein arranged with reference to the period when the irrigation first commenced in them, and the revenue for each year of the six years, ending with fusly 1263 (1853-54), is shown in comparison with the previous five years' average. The result in these villages for the six years is an increase of 2,52,021 rupees, of which, allowing 65,820

rupees to have proceeded from other causes not connected with the annicut, 1,86,201 rupees, it is supposed may be safely taken as direct gain from the works. To this is to be added 1,30,038 rupees, being an estimate of the revenue which accrued to Government in fusly 1263 (1852-54) in other localities, as shown in the statement, making a total profit at the period mentioned of 3,16,239 rupees. The permanent addition at this moderate computation to the annual land revenue of the district was thus 40,789 rupees in one tract only, viz., 45 villages of the Biccavole talook; a fair proportion of the further sum of 1,30,038 rupees being added to this, it will be found that the annual land revenue has been augmented by a sum probably exceeding 1,30,000 rupees, the increase indicated in para. 20 above.

See Column 5 of the statement.

30. Besides the effects on the land revenue, the impulse given to trade and general consumption by greater facilities of transit and circulation of large sums in the district, combined with other causes, such as the establishment of a large sugar factory near Rajahmundry, the demand for oil seeds in the European market, has brought additional returns to Government under the other sources of revenue. The value of exports has risen from about 3,50,000 rupees in 1841-42 to upwards of 16,00,000 rupees in 1852-53, and that of imports of other goods, besides grain, from 60,000 rupees to nearly 2,00,000 rupees Comparing the average of five years before the annicut with that of eight years subsequently, there is an average annual increase of 1,07,756 rupees, or a total increase since the annicut of 8,62,048 rupees It would be difficult to state with nicety what portion of this increase belongs to the annicut outlay, but, deducting one-third as proceeding from other causes, there is a receipt of 5,75,701 rupees as probably attributable to that influence

Average Annual Increase.

Spirits - - -	*Rs* 30,369
Home consumption of salt -	40,327
Moturfa - - - - -	11,449
Sea Customs, though greatly reduced by the operation of Act VI of 1854 - -	25,611
	1,07,756
	8
	8,62 048
Deduct ⅓ - - - -	2,86,347
	Rs 5 75,701

31. The profits, then, to Government at the close of fusly 1263 (1853-54) from the expenditure for the Godavery Annicut and its subsidiary works may be thus stated:

	Co.'s Rs
The increased collections from lands under the Toolia Bhaga from 1257 to 1263 fusly are taken at - -	1,86,201
Those in 1263 fusly in other localities - - - -	1,30,038
	3,16,239
Of the increase in the revenue from extra sources described above, two-thirds may be put down to the annicut -	5,75,701
Total -	8 91 940

This gives nine lacs for the actual receipts But to this may fairly be added the increased receipts of the Pittapoor Zemindar noticed above; viz.:

From 1257 to 1263 fusly - - - - -	29,627	
In fusly 1263 - - - - - - - -	10,000	
		39,627
Amount which might have been realised from enam lands under the Toolia Bhaga:		
From 1257 to 1263 fusly - - - - - -	38,534	
Ditto - - - ditto for such lands watered in 1263 fusly - - - - - - -	5,000	
		43,534
Grand Total -		9,75,101

32 There has been thus a direct receipt of 9,75,101 rupees since the commencement of the works against an expenditure of 20,37,917 rupees on that account, with a permanent addition to the annual revenue from the land at the close of the period reviewed of a sum not less than 1,30,000 rupees.

33. Satisfactory as these results will doubtless appear, other advantages both

to Government and to the people have been reaped, which enhance many fold the value of this important work. The season of fusly 1263 (1853-54) was one of severe drought. By extraordinary exertions the civil engineer succeeded in conveying water from the three main lines of irrigation to the wet cultivation and over the greater part of the dry lands in time to save the produce when it was on the point of perishing. Early in December 1853 the late Commissioner visited the district, and, from inquiries carefully made, it appeared that a revenue of 6,59,856 rupees was saved from imminent peril by the exertions mentioned, and that the value of the produce preserved to the country exceeded 40,00,000 rupees. But for this opportune supply of water about 2,00,000 rupees of the assessment must have been given up by Government as remissions, and the loss of stock and capital would have been great. As it was, the revenue was punctually discharged, the ryots enjoyed enormous profits in consequence of the enhanced prices of grain, food was augmented, and the calamities of famine were averted.

Note.—Without the head of water at the annicut this could not have been done.

Note—Whatever may be thought of this valuation, the argument, viz that a vast quantity of produce was saved to the country, is not affected.

34. One important benefit remains to be noticed, viz., the effect produced on the agricultural labourers. A new demand for their labour has been created; they are no longer dependent on their masters for a scanty provision of grain, with a cloth given annually, but seek employment for themselves, and earn from two to three rupees a month.

	Rs.
Assets as per accounts of subdivisions - - -	24,79,829
Deduct ditto, of estates in the possession of zemindars -	7,27,160
Assets of lands at present belonging to Government -	17,52,669
Peshcush of the above -	13,24,431
The sist (atkoobady) of fusly 1263, exclusive of 13,610 rupees, the sist of jaghires not included in the permanent assets, and reverted subsequently - - -	15,19,130
Decrease of fusly 1263 below the assets - - -	2,33,530
Increase of ditto, above the peshcush - - - -	1,94,708

35. It will be asked perhaps whether the present revenue will bear a comparison with the assets of the district on which the permanent settlement was based. The figures in the margin show that the revenue at the present time is 1,94,708 rupees above the peshcush, or demand of Government on the zemindaries, but 2,33,530 rupees below the assets on which that demand was framed. The Government are doubtless entitled to have the sum last mentioned made up to them irrespective of any extraordinary outlay of public money, the prices of grain and other circumstances being the same as when the assets were taken; but this is not the real question at issue at present, and it will be time enough to institute a comparison when the district shall have recovered more completely from the state of depression observable before the annicut project was put forward. As regards the annicut and its subsidiary works, there seems abundant grounds for the conclusion, after making due allowance for the progress to be expected under ordinary circumstances, that they have been followed by a large increase to the standard revenue of the district, which but for their influence would not have taken place, together with other results of vast importance, as set forth in the foregoing paras. Viewed with all those effects, apart from the question of navigation, it will be readily admitted, that not only have more than equivalent results been obtained for the outlay incurred, but that a foundation has been laid for benefits surpassing largely what the works have yet yielded. Considered in its navigation aspect, as realising all the advantages of improved communications, the conclusion as to a full equivalent for the expenditure will probably be found equally true.

Reports of the Sub-Collector in charge regarding the effects of the works.

Dated 4th May 1853.

36. Mr. Taylor, the Sub-Collector in charge of Rajahmundry, addressed the Board of Revenue, under date 23d September 1854, on the effects of the Godavery works, and it is the desire of Government that Mr. Taylor's reports, one on the Collector's Division, and the other on that immediately under his own management, submitted on that occasion, should be carefully tested. These papers discuss at some length the benefits which the Government and the country have derived from the works in question. The conclusions are drawn from a comparison of the revenue during six years, commencing with fusly 1257 (1847-48), the first year of annicut expenditure, with the six previous years, the last year of this series or fusly 1256 (1846-47), entering more immediately into the comparison, and it is assumed that the whole increase of land revenue during the second series of six years, amounting to 8,51,048 rupees, is to be ascribed to the annicut, and the expenditure connected with it.

37. Mr. Taylor's inferences are fallacious, inasmuch as the first series of six years represents a period of extraordinary declension. The figures in the margin show the state of the revenue at that time. In fusly 1253 (1843-44), the Special Commissioner commenced his inquiries, and after that date a revival of the revenue is apparent. Adverting then to the low state into which the revenue had fallen during that period to its subsequent improvement before the annicut expenditure commenced, and to the fact that it had not attained its normal state in fusly 1256 (1846-47), the last year of the first series, the inference that the entire increase during the second series is solely ascribable to such expenditure is not sustainable Some allowance should have been made to the reforms and administrative energy which followed the institution of the Commission, which, though aided by the annicut after fusly 1256 (1846-47), cannot be supposed to have suddenly yielded their influence on the restorative power of that work coming into operation.

		Rs.
Normal Revenue	- -	19,00,0
Fusly 1251	- -	15,31,2
„ 1252	- -	15,15
„ 1253	- -	15,54,3
„ 1254	- -	17,31,33
„ 1255	- -	17,49,31
„ 1256	- -	18,12,4

38 Following up the view that the whole increase is to be credited to the annicut, an attempt is made, in para 19 of the report on the Collector's Division, to distribute it under specific heads as shown in the margin, but in the absence of data for thus distinguishing the effects of the expenditure, the apportionment cannot be received as real; even following the course of expenditure for the different improvements, as is carefully done in para 16 of the report on the subdivision, little approach is made towards the acquisition of information sufficient for exhibiting results in a classified form.

Increase in the Collector's Divisio only

	Rs.
Increase from 1257 to 1259 Fusly, being profit by general expenditure - -	194,50
Ditto, from embankments and drainage - - -	301,92
Ditto, from supply of water,	57,26
	553,69
Deduct decrease - -	110,071
Remaining - - -	443,62

39 The remarks in the foregoing paras. apply equally to the few villages exhibited in para. 17 of the report on the subdivision, though the great advantages derived from embankments and the presence of water at critical periods are fully apparent in the several instances noticed. In para. 24 of the same report, Mr. Taylor admits that the classification of effects is arbitrary.

40. Mr. Taylor, however, shows in both papers that he is quite aware of the benefits derived from a better system of management, and of the difficulties presented in any attempt to state with nicety the actual effects of the annicut outlay, but he thinks that the highest administrative intelligence might have been at fault had it not been for the powerful aid afforded by that expenditure, and he justly observes that the collections have been greatly assisted by it.

Report on the Collector's talooks, para 18

41. As a proof that other causes of increase have been in operation during the last five years, it is only necessary to compare the results in the upper portions of the district with those obtained in the Delta talooks. The comparison is as follows:—

		Collections of Fusly 1256	Total Increase or Decrease of Six Years from Fusly 1257 to 1262	Centage
		Rs.	*Rs*	*Rs.*
Under the Collector -	Delta Talooks -	86,317	+ 395 067	67,38
	Other „ -	197,757	+ 178 827	90,42
Under the Sub-Collector -	Delta Talooks -	413,291	+ 200 309	48,46
	Other „ -	34,865	— 25 346	72

The result, so far as regards the Collector's Division, is thus very largely in favour of those parts of the district beyond the influence of the annicut, and is ascribed by Mr. Taylor, among other causes, to the better opportunity enjoyed by some villages for the development of their resources in consequence of their having reverted to Government from zemindary control. Mr. Taylor adds that it is also "mainly and justly due to improved management and better protec-

Report on the Collector's talooks, paras 7 to 13

Ditto, para. 13.

tion

tion to life and property," aided by public and private outlay of money, the latter having reference to the expenditure by the owners of the sugar factory near Rajahmundry, with "a succession of propitious seasons and exposed to no calamitous visitations impossible to control or to the miseries of drought and famine" The talook of Rajahmundry, in the Collector's Division, is in some degree an exception. This is a dry grain talook without irrigation, and therefore more susceptible of vicissitudes of season.

42. The upper lands of the subdivision consist of one talook only, viz., Taudemulla Its deterioration, as above represented, is owing to fluctuations of season and a long prevalence of the sharing system of settlement.

43 In the Delta talooks the beneficial influence of the annicut has indeed been extensively felt, but it is hardly proper to attribute to this cause alone the improvement that has taken place, opposed as it is by the large increase in the upper talooks, and the decided testimony borne to better management. The blessing of this work to the country has been fully shown in former paras., and it is not in any way to its disparagement that a share of the general improvement should be ascribed to causes ordinarily in operation, such as a vigilant administration and good seasons. The annicut, moreover, has never been put forth as solely influential in the Jummabundy reports received from the district.

44. The average collections for the six talooks beyond the annicut for each of the two series of six years should be 181,318 rupees and 227,561 rupees respectively, and not 183,098 rupees, and 235,000 rupees, as stated in para. 13 of the report on the Collector's talooks.

Appendix, Nos. 12 and 13

Note.—These calculations are made for a rich soil and favourable seasons. On its conversion into wet the produce is greater in the first statement than in the second, owing probably to the former including a second crop

Report on the Subdivision, para. 28

Ditto, ditto

Ditto, ditto, para 26

45. Interesting returns showing the relative value of a pootty of dry and wet cultivation on irrigated land for the first five years of the land being so occupied, and of a pootty of dry cultivation on unirrigated land and the same converted into wet, are given in paras. 33 to 35 of the report on the division of the Sub Collector. The profit to the ryot, after deducting expenses, not including the assessment of Government for that period, from irrigated dry cultivation, is *Rs.* 564 8. and that from wet, after a similar deduction, is *Rs.* 592. 8. During the first two years of the conversion in both cases the ryot loses, and the difference after that period in favour of wet cultivation is inconsiderable in the case of irrigated dry land, but great in that of unirrigated dry land converted into wet. The loss for the first two years and the knowledge that an additional impost will be imposed on the land being converted from dry into wet, have retarded the progress of wet cultivation. "Both in Mogultoor and Tanookoo," Mr. Taylor observes, "the ryots have been satisfied with using the water, to ensure good returns of their usual crops, rather than attempt the culture of rice, or other more valuable products," notwithstanding these impediments hitherto to a full and profitable use of the water, Mr. Taylor shows that there is a growing desire to obtain it; "every village," he says, "desires to own a water-course;" and, adverting to those villages which are impoverished in consequence of neglect or exposure to inundations, he observes, "I am happy to say that the inhabitants of these villages are no longer desponding; they have not been unmoved spectators of what has been doing around them, and they look forward with hope to a share of those benefits which others have already shared" This appreciation by the ryots of the advantages of the Godavery works was confirmed by my own personal observation while on circuit.

Report of the Collector's Division, para 26

46. The peculiar character of the assessment generally, the fact that the dry assessment is in many cases higher than the wet, and the desire that has sprung up generally to obtain annicut water, show the importance of an early adjustment of the demand of Government on some fixed principle.

47. Statements Nos. 9 and 10 of the Appendix have been prepared from statement Z, which accompanied Mr. Taylor's reports under consideration, and convey the information intended by Mr. Taylor in a more simple form.

Report on the Subdivision, paras 46 and 47.

48. Important testimony is borne in these paras. to the great value of the new channels as lines of communication. The carriage of goods, where the channels can be used, has been greatly facilitated, and the cost of transport has been reduced nearly two-thirds. On the completion of the channels it is

expected that the transit charges will not be one-eighth of their former amount. It is owing to the facility thus created that the price of 1,000 bamboos at Woondy has fallen from 25 to 15 rupees The ryots also can obtain a fair market for the products they have raised, whereas when transport was difficult they were obliged to put up with what the soucars on the spot would give them.

49. The tabular view of the former and present charges for the transport of goods in para. 46 of Mr. Taylor's report on the subdivision, has been transcribed and will be found in No 11 of the Appendix.

50. From whatever quarter viewed, whether as a work of irrigation in the benefits enjoyed from the presence of water, in increased production and saving of produce from destruction or for purposes of navigation as furnishing lines of communication for trade and general intercourse, the annicut is now indispensably necessary to the country, and the attention is forcibly drawn to the importance of its completion at an early period, and to its maintenance at all times in a state of thorough efficiency.

Future e tions.

51. The Government wish to be furnished with an estimate of the probable extent of land on which the water cess will be imposed, and the amount to be anticipated on the completion of the works. In framing such an estimate it is necessary to bear in mind that the annicut water will not flow to the entire area entered as irrigable without auxiliary appliances as pacotahs for raising it, and that a considerable portion of the land bears a high assessment either as usual wet land or as dry. There are no data for fixing with any degree of nicety the extent of land for the irrigation of which it will be necessary to raise the water by the ordinary means in use above the level secured by the annicut, but it is supposed to be considerable. Taking this circumstance into consideration with the fact that the present standard of assessment is on the whole high, it would hardly be safe to assume a higher rate than 1¼ rupee per acre as the probable increase to Government from the land on the irrigation being perfected.

52 It must also be remembered that there is scarcely any land in the Delta which never before paid anything. The Delta has been for the most part occupied, though its revenue has fluctuated from uncertainties of season One main object of the annicut is to remove the effects of this uncertainty

53. An increase of 1¼ rupee per acre in return for the great additional value imparted to land by a well organised system of irrigation, is certainly very little, but, however inapplicable so low a rate would be, under ordinary circumstances, a higher standard cannot be safely taken in the existing state of things in the Delta.

54 As, however, any estimate of ultimate financial effect must be at present in a great degree conjectural, it seems better to wait till further experience shall furnish data, on which reliance can be placed before any attempt is made to estimate, with an approach to nicety, future probable returns.

55. An addition of 1¼ rupee per acre though small compared with the estimate when the project was first entertained, represents only a portion of the entire increase of income to be expected. The whole benefit to Government will embrace, besides direct augmented returns, the increase under other sources of revenue, the natural consequence of a high degree of general prosperity, the stability afforded to a fluctuating revenue, the saving of remissions for losses, and the prevention of that great deterioration of capital and stock on occasions of inundation and drought. The vast and incalculable benefits to the people at large in an ample supply of food and sundry products must also be considered among the advantages to be derived, a large instalment of which they have had the good fortune to enjoy during the drought of fusly 1263 (1853-54)

56 The total expenditure up to November 1854, was stated in Appendix A, of the General Report for fusly 1263 (1853-54), to be 20 lacs of rupees For the increased income already derived together with the almost immeasurable advantages enumerated in the foregoing para., it will be admitted that the outlay for

the completion of this great work may be safely allowed to rise considerably above the expenditure already incurred.

57. The yearly outlay and cost of establishments have been computed at 1,70,000 rupees, which with 1,20,000 rupees being interest at 5 per cent. on a capital invested of 24 lacs, gives a total of 2,90,000, or a sum less than four annas per acre as the yearly cost of conveying water to the land. Adverting to the magnitude of the subsidiary channels, which can only be appreciated by being seen, to the double function they will be required to perform, viz., irrigation and navigation, and to the imperative necessity of improving them, and maintaining them at all times in a state of complete efficiency for those purposes, for the annicut is now indispensably necessary to the country, it seems that three lacs of rupees is the lowest sum that can be put down as the annual charge for repairs and cost of establishments, not including interest.

58. It was expected on the occasion of the former estimate, that 100,000 acres of land would be laid down with sugar cane. It seems improbable that such a result can be speedily realised. At present, the extent occupied with this product in the Rajahmundry Delta is only 3,048 acres, and as the large sugar factory near Rajahmundry, consumes largely palmyra jaggery, there is little prospect of an immediate extension of cane cultivation in any material degree. It seems, however, not improbable from what I learn that, on the land assessment being finally fixed, when all uncertainty as to its amount will be removed, and free scope given to the occupation of land, the cultivation of this product will be more generally followed, and that cane jaggery will be substituted at the sugar works for that obtained from the palmyra. At present, palmyra jaggery is sold at a rate 25 per cent. below cane jaggery, but this disparity of rate will cease on the backwardness to grow cane which is now manifest being overcome.

First Report of Public Works Commissioners, para 273.

Note.—The annicut has since come into operation with increased benefits, by enabling the ryots to commence cultivation earlier, thereby obtaining richer crops, and to secure a more extended cultivation. The irrigation, in its ordinary state, could not insure this timely and certain supply of water. The Annicut was necessary for this end.

For the Three Delta Talooks the Sub-Collector's entries of waste are as follows —

	Potties.
Fallow - - - - -	3,163
Immemorial waste - -	224
	3,387
	8
Acres - - -	27,096

Mr. Taylor's Report on the Subdivision above noticed, para. 30.

59. The great results obtained in the Woondy talook and under the Samulcottah Channel must not be viewed as furnishing a standard of increase for the Delta generally. The revenue of the former was greatly depressed below its normal condition, in consequence of the neglected state of the irrigation, and the losses entailed by the sharing system of settlement. The increase was the natural consequence of an irrigation put in order, and of an improved system of management. It was effected without the annicut. The increase in the case of the Samulcottah Channel is owing to there having been much land under it out of cultivation, which, on the resuscitation of the irrigation, was taken up. Both are striking instances of the value of maramut outlay, applied for the restoration of revenue; but their circumstances differ from those of the Delta generally. Viewed broadly, the Delta may be said to be nearly occupied, having an assessment which approaches a maximum standard, the main function of the annicut in this case will be to give permanence to a fluctuating revenue, and the effect will not be so striking as in the other cases cited. Lastly, in estimating future prospects, the probable effects of increased production on the prices of grain must not be lost sight of. The value of money may also change. But these contingencies will be more properly noticed when an adjustment of the assessment comes under consideration.

Question regarding the additional tax for water.

Proportion of the produce to be left to the ryots, $\frac{3}{5}$ths on land producing dry

60. I proceed to submit the information called for in respect of the water rate. It is inquired whether a fixed rate per acre, or other extent for each of the kinds of crop, or an uniform rate per acre, a difference being made between those kinds of crop which require full irrigation, and those which consume a much smaller quantity of water, cannot be adopted for the arrangement submitted by the late Commissioner, which received the sanction of Government on the 5th January 1855. The proposal of the late Commissioner varied with the crop raised, the tax being supposed to be equivalent to a certain proportion of the profits to the ryot from such crop. It was not intended that the addi-

tional tax thus fixed should be imposed on the land so occupied, and from the demand of Government on it. This could not be done under joint rents, as it was the collective rent only which the Government officers had the power to increase its apportionment being left to the ryots themselves. The ryots were informed by proclamation that two years' exemption from extra cess would be allowed from the time of the water being first brought to each particular village; that in the third year a fair amount would be fixed as the water rate, a moiety of which would be demanded in that year, and the full amount in the fourth; and that the apportionment would be left to themselves, the servants of Government interfering only on complaints of unequal distribution, and the exercise of undue influence by the headmen or pettanadars of the village. The ryots were further informed that the sum thus fixed at the early part of the season would not be augmented during that year.

crops, ½ on ditto, ditto, paddy, ⅔ds on garden produce, ¾ths on sugar cane.

61. It was a part of the instructions to Collectors that the actual produce of the different soils in each village should be examined by the Government officers, to serve as a guide for fixing the charge for water, but it was ascertained during my late circuit, that these orders had been only partially attended to, and that considerable difficulty was felt in carrying them out In a letter on the subject, just received from the Collector of Rajahmundry (which will be submitted to Government hereafter), together with my Report on the practicability of immediately fixing a definite assessment on each field, the following passage occurs —"The crop on fields irrigated last season may have this year been raised without the use of the water Land, on which a second crop was raised by help of the water last year, may this year have been cultivated with but one. The first crop, again, may have been brought to maturity without using the water, which may have been taken for the second crop only In a great part of the Ramachendrapoor talook in particular, a paddy crop was this year brought to maturity, on a large extent of land, from the ordinary monsoon rains These lands have subsequently been irrigated by the annicut water, and a fine crop of gingely oil-seed raised. There are many other points, which it is not necessary to detail. I allude to those I have enumerated, with the view of showing that it is useless, even if the estimates and accounts of actual kyle were worthy of a greater degree of trust than I fear they are in general entitled to, to attempt to apportion with any great nicety the additional tax to be imposed, with reference to the different crops raised, and the extent of land which may happen to be irrigated in the present season All that we can do and all that under the system of revenue administration which now obtains in this district seems to be necessary, is to fix a fair sum, after a careful consideration of the general results, and of all the circumstances affecting the profits of the ryots."

From Collector, 14th June 1855, with copy of a letter from the Sub-Collector, dated 17th May 1855

62 Referring to the principle, according to which the water cess was to be imposed, viz, that of limiting the tax to a certain proportion of the estimated profits on each description of crop, Mr. Taylor, the Sub-Collector, observes: "It was simply a test by which to determine whether the assessment already levied was sufficiently high, or whether additions could fairly be made to the demand. The great object was to ascertain what the land actually yielded when supplied with annicut water; and if it were found that the amount of gross produce and the generally improved circumstances of a village justified the levy of teerwa jasty, to assess it accordingly; that is, to make an addition to the collective or joint rent of the villages, the distribution of which should be left to the ryots themselves."

63. The water tax being thus determined on general data, and its amount discretionary and blended with the assessment of the village, cannot be represented at a given sum. In five villages only of the Woondy talook, it is separately distinguished, though not formed on any definite principle. The following statement shows the amount in the five villages in question, with the assessment of these and other villages in the talook, and what the assessment ought to be if reliance could be placed on the examination of produce instituted for the occasion: —

ITEMS		Land	Demand for Fusly 1264	Demand on the Government Share of the Estimated Produce.	Difference between Cols 3 and 4	Teerwa Jasty additional Cess for Water.
		Poottics	*Rs*	*Rs*	*Rs*	*Rs*
Of the 5 villages assessed with teerwa jasty - - - - - - -	*Wet*	299	8,264	11,621	+3,357	—
	Dry	20	297	109	—188	—
TOTAL - - -		319	8,561	11,730	+3,169	1,036
Of the 82 villages not assessed with teerwa jasty - - - - -	*Wet*	2,910	78,236	96,389	+18,153	—
	Dry	1,100	28,700	16,468	—12,232	—
TOTAL - - -		4,010	1,06,936	1,12,857	+5,921	—
		4,329	1,15,497	1,24,587	+9,090	1,036

	Particulars.
For Fusly 1264 - - - - - - - - - - -	275 - -
„ 1265 - - - - - - - - - - -	700 8 -
„ 1266 - - - - - - - - - - -	60 8 -
TOTAL - - - *Rs*	1,036 - -

64. The irrigated products may be viewed under two classes, viz., such as require a large quantity of water to bring them to maturity, and those for which a moderate supply will suffice. The former includes paddy, sugar-cane, and cocoa-nut plantations; the latter, turmeric, onions, and all ordinary garden produce. The quantity of water necessary to bring these products to maturity varies with the class to which they belong, as above defined, all in the same class requiring about the same quantity of water. To tax a given extent, then, with reference to the product under this view, is the same thing as taxing it with reference to the quantity of water used. If this principle of assessment is to be observed, the collector must ascertain yearly the extent of land irrigated and with what crops, and then apply the higher or lower rate, as the case may be. Under the joint-renting system, data will thus be furnished for adding to the collective demand on the village which has to be broken up and distributed *de novo*; but the sum to be paid by the occupant for the water taken by him, will differ from the amount which appears in the Collector's calculations.

65. The true mode of taxing irrigated land is that which has the sanction of immemorial usage; viz., to fix the assessment on a joint consideration of the quality of the land and of the quality of the irrigation. Two scales of rates for the different soils of a district would thus be fixed, one for lands enjoying a full and certain supply of water, the other for lands, the irrigation of which is imperfect. This rule applies equally to tanks and river channels. If this principle of taxation were strictly attended to, some descriptions of what are generally known as dry products, as well as all garden produce might be raised with profit. The remark applies particularly to Indigo, which would be grown under sources of imperfect supply, if the assessment were not a bar. The system too often adopted is, to tax all irrigated land with the paddy assessment, without reference to the quality of the irrigation. The supply of water may be either partial or deficient to such an extent as not to admit of paddy being sown that year. In the former case, a proportionate remission is given; in the latter, the assessment is not charged at all, and the land may remain three and four years together unproductive. With a tax fixed with reference to the quality of the irrigation, both the Government and the holders of land would be gainers, as a return may be looked for with confidence every year.

66. The principle of a collective demand is, however, an obstacle to the introduction of rates of assessment founded on a combined consideration of both land and irrigation.

67. The irregular character of the assessment as at present found, will be apparent on consulting Statement No 6 of the Appendix. Columns 17, 22, 27, 37, 42, 47, elucidate this point, although cultivated with the same description of crops the assessment in some instances is upwards of 100 per cent below what it is in others This great irregularity is more fully exhibited in Statement No. 7, which shows the wet lands of Balabhadrapuram, formerly watered by tanks but now under the annicut, arranged by fields under their respective classes, and the assessment on each field according to the village apportionment. It will be seen that no two fields of the same class bear the same rate, and that the rates of the same class differ very widely from each other. In breaking up the collective demand, considerations besides the class to which the land belongs, regulate the sum to be paid by each ryot.

68 The difficulties above noticed are increased by the rates borne by unirrigated land being equal, in the present condition of the assessment, to those of irrigated land. The addition of a specific sum to the former, as the water cess is impracticable, till the rates of both descriptions of land are reduced to their just proportions The following table exhibits the average rates of assessment as borne in the present accounts for the different Delta talooks —

	TALOOKS.	DRY			WET			GARDEN		
		Land	Sist	Average	Land.	Sist	Average	Land	Sist	Average
	1.	2	3	4	5	6	7	8	9	10
		Acres	*Rs*	*Rs a p*	*Acres*	*Rs*	*Rs a p*	*Acres*	*Rs*	*Rs a p*
1	Ranley - - - -	11,904	50,544	4 3 11	184	868	4 11 6	241	695	2 14 2
2	Cota Ramchendrapuram -	22,256	1,03,584	4 10 6	1,584	6,126	3 13 10	27	333	12 2 -
3	Tanookoo - - - -	32,960	1,37,678	4 2 10	1,760	8,595	4 14 2	63	333	5 4 4
4	Nagaram - - - -	13,360	55,525	4 2 6	5,632	24,833	4 6 6	507	3,251	6 6 7
5	Mogultoor - - - -	25,160	96,200	3 13 2	7,792	23,312	2 14 10	842	6,323	7 8 3
6	Amlapoor - - - -	14,768	55,387	3 12 -	15,584	56,422	3 9 11	418	1,567	3 11 10
7	Bickavole - - - -	8 330	25,820	3 1 7	19,336	78,812	4 1 3	—	—	—
8	Woonds - - - -	10,606	33,424	3 2 -	21,424	75,387	3 11 4	12	1½	- 2 -
	Villages of Cocanada and Pettapoor Divisions	856	1,969	2 4 10	1,200	4,307	3 9 5	22	117	5 6 -
9	Capaveram - - -	34,424	88,212	2 9 -	9,120	42,575	4 9 8	—	—	—
	TOTAL - - -	174,720	6,48,343	3 11 5	83,616	3,21,237	3 13 6	2,132	12,620	5 14 9

69 The difficulty of securing the rights of Government under the joint renting system was fully felt by the late Commissioner, but adverting to the discouragement experienced by the ryots from the uncertainty of the present demand, which was fixed on general considerations of what the village was capable of paying under its altered circumstances, and not on any definite principle intelligible to them, it was thought necessary, that some mode of regulating the demand of Government should be introduced, which would remove all doubt from the minds of the people. Hence the orders for adopting as a temporary expedient, a water,cess on the crop in the manner stated

70 The observations contained in the foregoing paras. will show, that under existing circumstances there would be great difficulty in introducing a water cess on the principle of a fixed rate per acre or other extent for each description of crop, or for the quantity of water required for the same. The principle of assessment which the late Commissioner ordered to be adopted as a temporary expedient, seems to present equal difficulties The labour entailed by both

plans cannot lead to definite results The only plan, bearing in view the desirableness of non-interference on the part of the Government officials, short of an adjustment on sound principles is to avail ourselves of the experience gained in the villages under the Toolia Bhaga, such as it is, and to fix one uniform rate per acre for all descriptions of land in the villages to be assessed. The assessment of lands under the Toolia Bhaga has been gradually raised at the discretion of the Collector during the last five or six years, and it is supposed to be equal now to one half of the gross produce or perhaps above it. As the irrigation of these villages has been brought to a high degree of perfection, and as all the lands under its influence participate alike in its benefits, the average rate for acre for all the lands in a given number of villages may be taken to represent for the most part a fair average rate for all other villages under similar circumstances. Thus the number of acres of land in a village* fully irrigated multiplied by this average rate, will give the collective amount to be settled as the demand of the year, its apportionment being left to the ryots as at present —

Note —The pootty is the land measure of the district, it varies in different parts, but on an average eight acres is estimated as its equivalent The contents of an acre are fully made known, and being uniform everywhere the village and talook establishments are forced, under suitable check, to be tolerably accurate in measuring the areas of fields

71. To illustrate this principle, the average rates in eight principal villages under the Toolia Bhaga are shown in the following table:—

	VILLAGES.	Average of Assessment for Fusly 1263.					
		Per Pootty			Per Acre		
		Rs.	*a.*	*p.*	*Rs.*	*a*	*p*
1	Padabramadavum	34	5	–	4	4	–
2	Bickavole	49	11	–	6	3	–
3	Maidapaud	49	12	–	6	3	–
4	Vetlapollem	43	–	–	5	5	–
5	Balabhadrapuram	35	6	–	4	7	–
6	Anapurroo	64	12	–	8	1	–
7	Davarapoody	65	10	–	8	3	–
8	Kasaveram	42	10	–	5	5	–
	TOTAL - - - *Rs.*	45	6	–	5	10	–

The average for the whole is 45-6 rupees per pootty, but it will be sufficient, perhaps, to assume 40 rupees per pootty as a fair standard rate which corresponds with inquiries instituted by the late Commissioner last year in regard to the produce of land The investigation in question seemed to show that a pootty of dry land would produce about six pootties of grain, and if irrigated * double that quantity. Following this view the calculation would be as follows:—

Produce of a pootty of irrigated land - - -	12 pootties.
Value at 10 rupees per pootty - - - -	120 rupees.
Ryot's share of the above at two-thirds - -	80 „
Ditto of Government at one-third - - -	40 „
Average per acre, assuming eight acres to a pootty	5 „

* *Note* —In a final revision of the assessment, these calculations would of course be further tested

72 Applying the foregoing standard rate to the land irrigated in fusly 1263 (1853-54), and comparing the result with the actual settlement of that year, it will be seen that the latter falls short of what would have been the demand according to the standard rate by about 25 per cent., thus:—

5,820 pooties cultivated, or	*Acres*	46,560
Demand at rupees five per acre	*Rs.*	232,800
Actual demand of fusly 1263	„	186,151
Difference to be added	„	46,649
Centage	„	25

The above difference would be distributed in the several irrigated Talooks as follows:

To be Added—	*Rs.*	*Rs.*
Bickavole	9,129	
Amlapoor	1,401	
Cota Rama Chendrapurm	1,574	
Mogultoor	6,409	
Tanookoo	92	
Woondy	31,693	
		50,298
To be Reduced—		
Caupaveram	3,098	
Nagarum	540	
Rally	11	
		3,649
	Rs.	46,649

73. The bulk of the addition appertains to the Woondy talook, where the assessment is light, but the additional demand being heavy, could only be imposed gradually.

74. The average rate of five rupees per acre would probably be a sufficient approximation to a fair demand for the present in many cases, but looking at the rates of the eight villages respectively mentioned in para. 54 above, it will perhaps be found necessary to impose a higher or a lower rate in some villages, according to circumstances. These would be exceptional cases, and must be left to the discretion of the Collector.

75. Extending the principle of a fixed standard rate to the Zemindary and Enam lands, the following results are obtained:

	Pooties.		*Acres.*
Zemindary lands	1,177	or	9,420
Enam lands	1,774	or	14,192
	2,951	or	23,612

	Rs.
Assessment of the above land at 5 rupees per acre - - -	118,060
Deduct usual ditto (estimated) at 30 rupees per pooty, or 3-12 rupees per acre - - - - - - - - - - -	88,545
Remaining - - - - - - - -	29,515
Of which 1-3d to be given up to the Zemindars and Enamdars, as proposed by the late Commissioner - - - - - -	9,838
Remaining 2-3ds to Government - - -	19,677

Supposing this principle to have been followed in fusly 1263 (1853–54), Government would have received about 66,000 rupees, as the charge for water, viz.:

	Rs.
For Government lands - - - - - - - - - -	46,649
For Zemindary and Enam lands - - - - - - -	19,677
	66,326

To Government, 21st December 1854. 4th January 1855

76. The foregoing adjustment of the rights of Government could only be adopted as an expedient for the time. The true mode of regulating the rights of all parties is to place the assessment at once on right principles. This was my object in the communications noted in the margin, and the subject is again under consideration pursuant to the orders of Government, dated 1st June last. The postponement of this measure is inexpedient, as it will increase the difficulties of adjustment, and keep the authorities in ignorance as to the real bearing of the new works on the occupation and cultivation of the lands under their influence.

77. The Collector of Masulipatam has been required, agreeably to the orders of Government, to draw up a paper similar to that prepared by Mr. Stokes for Guntoor, to show the past and present condition of that district, and the benefits anticipated from the new works.

78. A brief remark on Mr. Stokes' paper will not be out of place. Mr. Stokes reviews in detail the revenue history of Guntoor, including the Palnaud, from the first period of the British connection with the country, and looking to the revenue system which has been pursued, and he adopts the important conclusion that the introduction of sound principle detachment, for to settlement for ordinary practical purposes are not necessarily dependent on a scientific survey. Both Guntoor proper and the Palnaud are illustrations of the truth of this remark. The former was settled by Mr. Stokes, the latter by Mr. Oakes, upwards of 30 years ago In both, inaccuracies of area were corrected by the means at hand, and there was no postponement of the benefits of sound revenue arrangements for an indefinite period, under an impression that a professional survey was the only remedy for proved evils of system. Valuable as a professional survey may be, in ordinary circumstances the principle may be pushed too far. Good field registers are indeed essential, and the first duty of a Collector is to revise the registers of land where he finds them untrustworthy. This was performed with a large measure of success in Palnaud and in Guntoor

with only ordinary means. The diffusion of a knowledge of surveying in Rajahmundry with the aid of a small grant sanctioned by Government for the purpose has increased the facilities of measurement in that district, and there seems no reason why the area of each village, including field maps, should not now be accurately laid down at a small additional charge to Government

79. Mr Stokes also draws the conclusion that Guntoor is lightly assessed, and he shows the average rate per acre for all the lands of the district to be only rupees 1-11. This rate is *primâ facie* moderate, but being the average of the entire cultivable area, it does not follow that the rich soils may not be too highly assessed But this subject will be discussed separately in conformity with the call of Government in Extract Minutes of Consultation, dated 2d June 1855.

I have, &c
(signed) *J. Goldingham*,
Commissioner

To J. D. Bourdillon, Esq.,
Secretary to Government, Fort St. George.

Commissioner's Office, Vizagapatam,
9 July 1855.

No 1 —STATEMENT of the Population in the Districts of *Rajahmundry*, *Masulipatam*, and *Guntoor*.

CLASSES	RAJAHMUNDRY			MASULIPATAM			GUNTOOR.		
	Number of Villages	Population.	Average per Village	Number of Villages	Population	Average per Village	Number of Villages.	Population	Average per Village.
1	2.	3	4.	5	6	7	8.	9	10
Above - - - 10,000	1	14,721	14,721	2	58,424	29,212	—	—	—
From - - 5,000 to 10,000	13	84,283	6,483	1	6,170	6,170	—	—	—
From - - 2,000 to 5,000	74	204,466	2,764	14	39,471	2,819	—	—	—
From - - 1,000 to 2,000	232	324,734	1,400	66	88,019	1,334	—	—	—
From - - 5,000 to 1,000	320	232,405	726	186	128,518	691	—	—	—
Below - 500 - -	587	138,974	237	1,042	200,264	192	—	—	—
TOTAL - - -	1,227	999,583	823	1,311	520,866	397	1,028	570,083	555
Mistake in the Account of Fusly 1263 - - - - -		12,453							
		10,12,036							

Commissioner's Office, Vizagapatam, 9 July 1855.

J Goldingham,
Commissioner

No 2.—STATEMENT of LAND in Occupation, and the Assessment thereon.

ITEMS.	RAJAHMUNDRY.					MASULIPATAM.					GUNTOOR				
	Land in Occupation.			Per Centage.		Land in Occupation.			Per Centage.		Land in Occupation.			Per Centage	
1.	Land. 2	Assessment. 3.	Average 4.	Land. 5	Assessment 6.	Land. 7.	Assessment 8.	Average. 0.	Land. 10.	Assessment 11.	Land. 12	Assessment. 13.	Average. 14.	Land. 15.	Assessment. 16.
	Acres.	*Rs.*	*Rs as.*	*Ac.*	*Rs.*	*Acres.*	*Rs.*	*Rs. as.*	*A. c.*	*Rs.*	*Acres.*	*Rs.*	*Rs. as.*	*Ac.*	*Rs.*
Dry - - - - - -	304,591	920,222	3 1	69	65	408,167	408,914	1 –	78 0	51	663,244	10,99,781	1 11	95	84
Wet:															
Annicut Channel of Godavery.	57,073	210,291	3 11	13	15	29,013	89,364	3 1	5 20	11	- -	- -	- -	0	–
Tanks - - - -	37,435	133,594	3 9	9	10	78,523	277,203	3 8	15 0	35	19,238	123,128	6 6	3	9
Channels - - - -	26,083	104,087	4 –	6	7	2,602	6,031	2 5	0 20	1	5,441	34,346	6 5	1	3
Wells - - - -	2,706	18,742	6 15	1	1	2,308	11,562	5 –	0 20	2	8,411	56,905	6 12	1	4
Rains - - -	10,650	31,477	2 15	2	2	288	1,111	3 14	0 20	¼	- -	- -	- -	0	0
TOTAL - - -	133,947	498,191	3 12	31	35	112,734	385,271	3 7	22 0	49	33,090	214,379	6 8	5	16
GRAND TOTAL - -	438,538	1,427,413	3 4	100	100	520,901	794,185	1 8	100 0	100	696,334	1,314,160	1 14	100	100

Commissioner's Office, Vizagapatam,
9 July 1855.

J. Goldingham,
Commissioner.

COLLECTIONS of LAND REVENUE and other Sources, in each Year, from 1212 to 1263 Fusly.

	FUSLIES.	RAJAHMUNDRY					MASULIPATAM					GUNTOOR.				
		Land Revenue			Revenue from the Extra Sources of Salt, Abkarry, sundry small Farms, Moturpha, and Stamps	TOTAL Collections.	Land Revenue			Revenue from the Extra Sources of Salt, Abkarry, sundry small Farms, Moturpha and Stamps.	TOTAL Collections	Land Revenue			Revenue from the Extra Sources of Salt, Abkarry, sundry small Farms, Moturpha and Stamps.	TOTAL Collections
		Demand on the Government Lands and Zemindary, &c Estates	Arrears	Collection			Demand on the Government Lands, and Zemindary, &c Estates.	Arrears	Collection.			Demand on the Government Lands and Zemindary, &c. Estates	Arrears	Collection		
	1.	2	3.	4.	5	6	7	8	9	10	11.	12	13	14	15	16
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs	Rs.	Rs	Rs.	Rs.	Rs.	Rs	Rs.	Rs.	Rs
1	1212—1802-03	- -	- -	- -	- -	- -	947,217	25,575	921,642	- -	- -	1,159,812	- -	1,159,812	—	—
2	1213	1,805,623	2,334	1,803,289	- -	- -	858,014	- -	858,014	- -	- -	1,224,825	- -	1,224,825	—	—
3	1214	1,797,023	2,267	1,794,756	- -	- -	871,283	- -	871,283	- -	- -	1,277,839	- -	1,277,839	—	—
4	1215	1,801,350	- -	1,801,350	- -	- -	925,619	- -	925,619	- -	- -	1,300,304	- -	1,300,304	—	—
5	1216	1,846,104	- -	1,846,104	- -	- -	926,822	- -	926,822	- -	- -	1,344,889	- -	1,344,889	—	—
6	1217	1,854,854	- -	1,854,854	- -	- -	925,998	- -	925,998	- -	- -	1,342,429	- -	1,342,429	—	—
7	1218	1,860,104	- -	1,860,104	- -	- -	926,996	- -	926,996	- -	- -	1,341,517	- -	1,341,517	—	—
8	1219	1,892,111	3,639	188,472	- -	- -	927,422	- -	927,422	- -	- -	1,353,526	- -	1,353,526	252,063	1,605,589
9	1220	1,901,562	45,875	1,855,687	- -	- -	928,046	- -	928,046	- -	- -	1,359,793	- -	1,359,793	337,456	1,697,249
10	1221	1,904,449	16,702	1,887,747	- -	- -	944,168	- -	944,168	- -	- -	1,374,952	- -	1,374,952	395,295	1,770,247
	Average	1,851,464	7,869	1,843,595	- -	- -	918,158	2,575	915,601	- -	- -	1,307,938	- -	1,307,938	—	—
11	1222—1812-13	1,021,952	15,902	1,006,050	- -	- -	942,117	- -	942,117	- -	- -	1,380,653	- -	1,380,635	396,714	1,777,367
12	1223	1,021,907	12,219	1,009,688	- -	- -	959,735	- -	959,735	- -	- -	1,388,213	131	1,388,082	306,364	1,694,446
13	1224	190,606	81,206	1,878,490	- -	- -	960,510	- -	960,510	- -	- -	1,385,313	- -	1,385,313	303,221	1,688,534
14	1225	1,912,613	27,260	1,885,353	- -	- -	955,791	- -	955,791	- -	- -	1,383,424	125	1,383,299	264,863	1,648,162
15	1226	1,900,155	27,997	1,872,158	- -	- -	955,806	- -	955,806	- -	- -	1,384,416	284	1,384,132	280,985	1,665,117
16	1227	1,899,879	2,176	1,897,703	- -	- -	955,585	- -	955,585	- -	- -	1,406,863	128	1,406,735	452,293	1,859,028
17	1228	1,813,457	6,792	1,806,665	- -	- -	955,478	- -	955,478	- -	- -	1,410,576	3,537	1,407,039	452,574	1,859,613
18	1229	1,883,234	11,563	1,871,671	- -	- -	955,768	- -	955,768	- -	- -	1,405,141	3,463	1,401,678	448,219	1,849,897
19	1230	1,867,837	20,038	1,847,799	- -	- -	955,486	15,155	940,331	- -	- -	1,395,049	168	1,394,881	333,650	1,728,531
20	1231	1,887,742	14,307	1,873,435	- -	- -	955,651	30,414	925,237	- -	- -	1,436,859	530	1,436,329	365,786	1,802,115
	Average	1,891,847	16,946	1,874,901	- -	- -	955,193	4,557	950,636	- -	- -	1,397,651	637	1,369,814	360,467	1,757,281

No. 3—COLLECTIONS of Land Revenue and other Sources in each Year from 1212 to 1263 Fusly—*continued.*

	FUSLIES.	RAJAHMUNDRY.					MASULIPATAM.					GUNTOOR.				
		Land Revenue.					Land Revenue					Land Revenue				
		Demand on the Government Lands and Zemindary, &c Estates.	Arrears	Collections.	Revenue from the Extra Sources of Salt, Abkarry, sundry small Farms, Moturpha, and Stamps.	TOTAL Collections.	Demand on the Government Lands and Zemindary, &c. Estates	Arrears	Collections	Revenue from the Extra Sources of Salt, Abkarry, sundry small Farms, Moturpha, and Stamps.	TOTAL Collections.	Demand on the Government Lands and Zemindary, &c. Estates	Arrears.	Collections	Revenue from the Extra Sources of Salt, Abkarry, sundry small Farms, Moturpha, and Stamps	TOTAL Collections.
	1	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13	14.	15.	16.
		Rs.	*Rs.*	*Rs.*	*Rs*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs*	*Rs.*	*Rs.*
21	1232—1822-23 -	1,832,542	27,777	1,804,765	- -	- -	955,519	28,143	927,376	- -	- -	1,451,952	137	1,451,815	308,977	1,760,792
22	1233 - - -	1,862,586	38,792	1,823,794	- -	- -	955,457	- -	955,457	234,644	1,190,101	1,436,898	2,515	1,434,383	294,510	1,728,893
23	1234 - - -	1,908,953	6,905	1,902,048	- -	- -	955,808	8,936	946,872	284,514	1,231,386	1,442,623	5,409	1,437,214	286,585	1,723,799
24	1235 - - -	1,868,258	15,284	1,852,974	- -	- -	956,078	14,237	941,841	266,753	1,208,594	1,452,591	5,624	1,446,967	346,647	1,793,614
25	1236 - - -	1,917,415	8,085	1,909,330	- -	- -	955,983	679	955,304	259,473	1,214,777	1,454,799	5,996	1,448,803	351,764	1,800,567
26	1237 - - -	1,854,842	1,891	1,852,951	- -	- -	955,980	50,674	905,306	262,666	1,167,972	1,445,466	5,183	1,440,283	343,207	1,783,490
27	1238 - - -	1,895,209	2,630	1,892,579	- -	- -	955,989	12,621	943,368	295,529	1,238,897	1,450,239	8,035	1,442,204	366,648	1,808,852
28	1239 - - -	1,851,682	34,129	1,817,553	- -	- -	955,988	53,989	901,999	204,863	1,106,862	1,429,130	3,651	1,425,479	532,591	1,958,070
29	1240 - - -	1,879,826	12,572	1,867,254	433,342	2,300,596	956,003	1,446	954,557	294,615	1,249,172	1,428,839	5,674	1,423,165	417,684	1,840,849
30	1241 - - -	1,822,757	25,176	1,797,581	425,206	2,222,787	944,216	39,607	904,609	296,306	1,200,915	1,416,631	202,313	1,214,318	485,340	1,699,658
	Average - - -	1,869,407	17,324	1,852,083	- -	- -	954,702	21,033	933,669	- -	- -	1,440,917	24,454	1,416,463	373,395	1,789,858
31	1242—1832-33 -	1,717,017	138,790	1,578,227	360,918	1,939,145	943,897	130,830	813,067	220,815	1,033,882	1,415,909	511,745	904,164	237,930	1,142,094
32	1243 - - -	1,805,173	44,800	1,760,373	465,598	2,225,971	944,094	83,019	861,075	272,598	1,133,673	1,375,713	547,287	828,426	347,158	1,175,584
33	1244 - - -	1,854,636	67,426	1,787,210	527,164	2,314,374	943,997	109,183	834,814	333,982	1,168,796	1,380,661	844,065	536,596	279,967	816,563
34	1245 - - -	1,769,137	34,853	1,734,284	230 228	1,964,512	944,101	177,862	766,239	280,574	1,046,823	1,378,057	612,799	765,258	305,830	1,071,088
35	1246 - - -	1,766,524	31,897	1,734,627	389,716	2,124,343	943 564	198,543	745,021	325,027	1,070,048	1,380,568	601,793	788,775	302,529	1,091,304
36	1247 - - -	1,785,084	86,861	1,698,223	274,099	1,972,322	941,681	146,347	795,334	310,359	1,105,693	1,402,530	622,124	780,406	364,184	1,144,590
37	1248 - - -	1,738,582	455,839	1,282,743	252,750	1,535,493	937,529	181,740	755,789	313,060	1,068,849	1,401,162	539,681	871,481	415,048	1,286,529
38	1249 - - -	1,775,371	316,188	1,459,183	236,303	1,695,486	944,667	113,254	831,413	346,278	1,177,691	1,411,361	457,182	934,179	428,904	1,363,083
39	1250 - - -	1,741,289	305,432	1,435,857	234,997	1,670,854	937,895	150,396	787,499	321,877	1,109,376	1,395,063	458,492	936,571	366,114	1,302,685
40	1251 - - -	1,763,865	229,579	1,534,286	371,328	1,905,614	942,409	152,202	790,207	337,068	1,127,275	1,391,590	462,810	928,780	371,123	1,299,903
	Average - - -	1,771,668	171,167	1,600,501	334,310	1,934,811	942,383	144,337	798,046	306,164	1,104,210	1,393,261	565,798	827,463	341,879	1,169,342

41	1252—1842-43 -	1,753,802	238,252	1,515,550	343,445	1,858,995	1,012,655	219,615	793,040	402,618	1,195,658	1,135,240	115,459	1,019,781	340,864	1,360,645
42	1253 - - -	1,707,954	153,669	1,554,385	397,983	1,952,368	979,463	228,951	750,512	339,452	1,089,964	1,075,011	192,585	882,426	410,142	1,292,568
43	1254 - - -	1,769,984	38,450	1,731,534	270,503	2,002,037	928,258	151,812	776,446	397,096	1,173,542	1,082,252	82,200	1,000,052	421,833	1,421,885
44	1255 - - -	1,768,138	18,624	1,749,514	275 149	2,024,663	951,702	62,652	889,050	468,663	1,357,713	1,290,048	43,859	1,246,189	418,090	1,664,279
45	1256 - - -	1,825 627	13,338	1,812,489	338,904	2,151,393	1,014,923	62,739	952,184	347,536	1,299,720	1,431,775	30,409	1,398,366	384 664	1,783,030
	Average of 5 Years	1,765,141	92,440	1,672,695	325,196	1,997,891	977,400	145,154	832,246	391,073	1,223,319	1,203,465	94,102	1,109,363	395,118	1,504,481
46	1257—1847 48 -	1,875,523	2,076	1,873,449	347,416	2,220,865	961,515	87,684	873,831	355,944	1,229,775	1,455,945	37,774	1,418,171	466,429	1,884,600
47	1258 - - -	1,931,299	2 596	1,928,903	351,203	2,280,196	1,061,694	239,510	822,184	384,275	1,206,459	1,518,463	52,409	1,466,054	496,924	1,962,978
48	1259 - - -	1,944,807	53,553	1,891,254	360,453	2,251,707	931,833	112,043	819,790	348,910	1,168,700	1,513,396	113,356	1,400,040	474,417	1,874,457
49	1260 - - -	1,991,485	18,004	1,972,861	336,895	2,309,776	949,304	115,895	833,409	371,327	1,204,736	1,403,059	68,159	1,334,900	502,721	1,837,621
50	1261 - - -	2,045,537	20,227	2,025,310	388,290	2,413,600	1,021,561	26,284	995,277	324,083	1,319,360	1,457,969	67,913	1,390,056	421,304	1,811,360
51	1262 - - -	2,067,116	44,651	2,022,465	408,671	2,431,136	1,069,831	26,366	1,043,465	228 359	1,271,824	1,434,585	54,272	1,380,313	678,496	2,058,809
52	1263—1853-54 -	2,055,261	36,751	2,018,510	388,660	2,407,170	1,053,600	12,414	1,041,246	367,495	1,408,741	1,406,943	51,122	1,355,821	468,052	1,823,873
	Average of 7 Years	1,987,290	25,465	1,961,825	368,811	2,330,636	1,007,057	88,599	918,458	340,056	1,258,514	1,455,766	63,572	1,392,194	501,102	1,893,386
	The average of seven years being in excess of that of five years - - -	222,149	- -	289,130	43,615	332,745	29,657	- -	86,212	Decrease 51,017*	35,195	252,301	- -	282,831	106,074	388,905
	If multiplied on seven years - - -	1,555,043	- -	2,023,910	305,305	2,329,215	207,599	- -	603,484	357,119	246,365	1,766,107	- -	1,979,817	742,518	2,722,335

* 1 The Land Revenue demand in Rajahmundry and Masulipatam includes the demand on the Government lands as well as the Zemindary Estates for each Fusly, while that of Guntoor includes the Beriz of Paulnad and the Peishcush on the Guntoor Circar, from 1212 to 1251 Fusly, and the Beriz of both from 1252 Fusly.

2. In the extra sources, the Sayer and Sea Custom are included.

3 A considerable portion of the arrears shown in this statement was authorised to be written off.

Commissioner's Office,
Vizagapatam, 9 July 1855.

J Goldingham,
Commissioner.

No. 3—Collections of Land Revenue and other Sources in each Year from 1212 to 1263 Fusly—*continued.*

	FUSLIES.	RAJAHMUNDRY					MASULIPATAM					GUNTOOR.				
		Land Revenue			Revenue from the Extra Sources of Salt, Abkarry, sundry small Farms, Moturpha, and Stamps	Total Collections.	Land Revenue			Revenue from the Extra Sources of Salt, Abkarry, sundry small Farms, Moturpha, and Stamps.	Total Collections.	Land Revenue.			Revenue from the Extra Sources of Salt, Abkarry, sundry small Farms, Moturpha, and Stamps	Total Collections
		Demand on the Government Lands and Zemindary, &c. Estates.	Arrears	Collections.			Demand on the Government Lands and Zemindary, &c. Estates	Arrears.	Collections			Demand on the Government Lands and Zemindary, &c Estates.	Arrears.	Collections		
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13	14.	15.	16
		Rs.	*Rs.*	*Rs.*	*Rs*	*Rs.*	*Rs.*	*Rs*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs*	*Rs.*
21	1232—1822-23	1,832,542	27,777	1,804,765	- -	- -	955,519	28,143	927,376	- -	- -	1,451,952	137	1,451,815	308,977	1,760,792
22	1233	1,862,586	38,792	1,823,794	- -	- -	955,457	- -	955,457	234,644	1,190,101	1,436,898	2,515	1,434,383	294,510	1,728,893
23	1234	1,908,953	6,905	1,902,048	- -	- -	955,808	8,936	946,872	284,514	1,231,386	1,442,623	5,409	1,437,214	286,585	1,723,799
24	1235	1,868,258	15,284	1,852,074	- -	- -	956,078	14,237	941,841	266,753	1,208,594	1,452,591	5,624	1,446,967	346,647	1,793,614
25	1236	1,917,415	8,085	1,909,330	- -	- -	955,983	679	955,304	259,473	1,214,777	1,454,799	5,996	1,448,803	351,764	1,800,567
26	1237	1,854,842	1,891	1,852,951	- -	- -	955,980	50,674	905,306	262,666	1,167,972	1,445,466	5,183	1,440,283	343,207	1,783,490
27	1238	1,895,209	2,630	1,892,579	- -	- -	955,989	12,621	943,368	295,529	1,238,897	1,450,239	8,035	1,442,204	366,648	1,808,852
28	1239	1,851,682	34,129	1,817,553	- -	- -	955,988	53,989	901,999	204,863	1,106,862	1,429,130	3,651	1,425,479	532,591	1,958,070
29	1240	1,879,826	12,572	1,867,254	433,342	2,300,596	956,003	1,446	954,557	294,615	1,249,172	1,428,839	5,674	1,423,165	417,684	1,840,849
30	1241	1,822,757	25,176	1,797,581	425,206	2,222,787	944,216	39,607	904,609	296,306	1,200,915	1,416,631	202,313	1,214,318	485,340	1,699,658
	Average	1,869,407	17,324	1,852,083	- -	- -	954,702	21,038	933,669	- -	- -	1,440,917	24,454	1,416,463	373,395	1,789,858
31	1242—1832-33	1,717,017	138,790	1,578,227	360,918	1,939,145	943,897	130,830	813,067	220,815	1,033,882	1,415,909	511,745	904,164	237,930	1,142,094
32	1243	1,805,173	44,800	1,760,373	465,598	2,225,971	944,094	83,019	861,075	272,598	1,133,673	1,375,718	547,287	828,426	347,158	1,175,584
33	1244	1,854,636	67,426	1,787,210	527,164	2,314,374	943,997	109,183	834,814	333,982	1,168,796	1,380,661	844,065	536,596	279,967	816,563
34	1245	1,769,137	34,853	1,734,284	230,228	1,964,512	944,101	177,862	766,239	280,574	1,046,823	1,378,057	612,799	765,258	305,830	1,071,088
35	1246	1,766,524	31,897	1,734,627	389,716	2,124,343	943,564	198,543	745,021	325,027	1,070,048	1,380,568	601,793	788,775	302,529	1,091,304
[illegible]	[illegible]	[illegible]	[illegible]	1,698,223	274,099	1,972,322	941,681	146,347	795,334	310,359	1,105,693	1,402,530	622,124	780,406	364,184	1,144,590
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

41	1252—1842-43 -	1,758,802	238,252	1,515,550	343,445	1,858,995	1,012,655	219,615	793,040	402,618	1,195,658	1,135,240	115,459	1,019,781	340,864	1,360,645
42	1253 - - -	1,707,954	153,569	1,554,385	397,983	1,952,368	979,463	228,951	750,512	339,452	1,089,964	1,075,011	192,585	882,426	410,142	1,292,568
43	1254 - - -	1,769,984	38,450	1,731,534	270,503	2,002,037	928,258	151,812	776,446	397,096	1,178,542	1,082,252	82,200	1,000,052	421,833	1,421,885
44	1255 - - -	1,768,138	18,624	1,749,514	275 149	2,024,663	951,702	62,652	889,050	468 668	1,357,713	1,290,048	43,859	1,246 189	418,090	1,664,279
45	1256 - - -	1,825 827	13,338	1,812,489	338,904	2,151,393	1,014,923	62,739	952,184	347,536	1,299,720	1,434,775	36,409	1 398,366	384,664	1,783,030
	Average of 5 Years	1,765,141	92,446	1,672,695	325,196	1,997,891	977,400	145,154	832,246	391,078	1,223,319	1,203,465	94,102	1,109,363	395,118	1,504,481
46	1257—1847 48 -	1,875,525	2,076	1,873,449	347,416	2,220,865	961,515	87,684	873,831	355 944	1,229,775	1,455,945	37,774	1,418,171	466,429	1,884.600
47	1258 - - -	1,931,299	2 596	1,928,903	351,293	2,280,196	1,061,694	239,510	822,184	384,275	1,206,459	1,518,463	52,409	1,466,054	496,924	1,962,978
48	1259 - - -	1,944,807	53,553	1,891,254	360,453	2,251,707	931,833	112,043	819,790	348,910	1,168,700	1,513,396	113,356	1,400,040	474,417	1,874,457
49	1260 - - -	1,991,485	18,604	1,972,881	336,895	2,309,776	949,304	115,895	833,409	371,327	1,204,736	1,403,059	68,159	1,334,900	502,721	1,837,621
50	1261 - - -	2,045,537	20,227	2,025,310	388,290	2,413,600	1,021,561	26,284	995,277	324,083	1,319,360	1,457,969	67,913	1,390,056	421,304	1,811,860
51	1262 - - -	2,067,116	44,651	2,022,165	408,671	2,431,136	1,069,831	26,366	1,043,465	228,359	1,271,824	1,434,585	54,272	1,380,318	678,496	2,058,809
52	1263—1853-54 -	2,055,261	36,751	2,018,510	388,660	2,407,170	1,053,660	12,414	1,041,246	367,495	1,408,741	1,406,943	51,122	1,355,821	468,052	1,823,873
	Average of 7 Years	1,987,290	25,465	1,961,825	368,811	2,330,636	1,007,057	88,599	918,458	340,056	1,258,514	1,455,766	63,572	1,392,194	501,102	1,893,386
	The average of seven years being in excess of that of five years - - -	222,149	- -	289,130	43,615	332 743	29,657	- -	86,212	Decrease 51,017*	35,195	252,301	- -	282,831	106,074	888,905
	If multptied on seven years - - -	1,555,043	- -	2,023,910	305,305	2,329,215	207,599	- -	603,484	357,119	246,365	1,766,107	- -	1,979,817	742,518	2,722,335

* 1 The Land Revenue demand in Rajahmundry and Masulipatam includes the demand on the Government lands as well as the Zemindary Estates for each Fusly, while that of Guntoor includes the Beriz of Paulnad and the Peishcush on the Guntoor Circar, from 1212 to 1251 Fusly, and the Beriz of both from 1252 Fusly

2. In the extra sources, the Sayer and Sea Custom are included.

* 3 A considerable portion of the arrears shown in this statement was authorised to be written off.

Commissioner's Office,
Vizagapatam, 9 July 1855.

J Goldingham,
Commissioner.

No. 4.—Revenue of Villages Irrigated by the *Tooha Bhagha* Channel from the *Godavery* Annicut.

Items	TALOOKS. 1	Fusly in which Irrigation commenced 2	Number of Villages newly Irrigated each Year 3.	Average Collections of Five Years before the Irrigation commenced 4	Average after Irrigation 5		Demand of Fusly 1263 6.	Comparison of Columns 4 and 5.		Comparison of Columns 4 and 6	
					Number of Years	Average Collections up to 1262 Fusly		Increase. 7.	Centage. 8.	Increase. 9.	Centage 10
Irrigated.	Caupaweram	1257 - - -	8	24,477	6	33,843	37,498	9,366	38·26	13,021	53 19
	Bickavole	1258 - - -	23	39,343	5	67,244	74,420	27,901	70 91	35,077	89·25
		1259 - - -	1	1,491	4	1,924	2,040	433	29·4	549	36·82
		1260 - - -	2	771	3	1,061	1,108	290	37·61	337	43·71
		1261 - - -	2	1,952	2	2,119	2,160	167	8·55	208	10 66
		1262 - - -	2	8,532	1	9,829	10,628	1,297	15·20	2,096	24 57
		1263 - - -	7	7,376	—	8,187	8,187	811	11·	811	11·
		Total - -	45	83,942	—	124,207	136,041	40,265	47·97	52,099	62 7
Not irrigated.	Caupaweram	For villages not irrigated the average collections, *from* 1253 to 1257 fusly, are given in col 4, and that of five years, from 1258 to 1262 fusly, in col 6.	85	98,852	—	125,264	134,351	26,412	26·72	35,499	35 91
	Bickavole -		12	17,300	—	22,252	24,719	4,952	28 62	7,419	42 89
		Total - -	97	116,152	—	147,516	159,070	31,364	27·	42,918	36·95
Irrigated.	Pittapore - Zemindary	1257 - - -	4	4,806	6	7,719	9,005	2,913	60 61	4,199	87·38
		1260 - - -	12	11,292	3	13,069	15,053	1,777	15·74	3,761	33 31
		1261 - - -	4	3,787	2	4,785	5,055	998	26 36	1,268	33 49
		1263 - - -	5	8,581	—	10,325	10,325	1,744	20 32	1,744	20 32
		Total - -	25	28,466	—	35,898	39,438	7,432	26·11	10,972	38·54

FUSLIES 1.	Balabadrapuram, irrigated from Fusly 1258. 2.	Bickavole, irrigated from Fusly 1258. 3.	Madapad, irrigated from Fusly 1258. 4	Vetlapollem, irrigated from Fusly 1258 5	Padabramadunum, irrigated from Fusly 1258. 6
	Rs.	*Rs*	*Rs*	*Rs*	*Rs.*
1253 - - - - - - -	3,138	3,622	2,373	3,504	3,680
1254 - - - - - - -	4,165	3,897	2,281	3,536	2,708
1255 - - - - - - -	1,516	2,922	1,462	1,218	2,563
1256 - - - - - - -	3,600	4,248	2,605	3,777	3,923
1257 - - - - - - -	4,000	5,824	3,087	4,363	4,820
Total - - - -	16,419	20,513	11,808	16,398	17,694
Average - - -	3,284	4,102	2,362	3,279	3,539
1258 - - - - - - -	5,250	7,367	4,543	5,261	6,218
1259 - - - - - - -	6,000	8,504	5,660	6,387	6,831
1260 - - - - - - -	6,721	9,148	6,644	7,676	7,384
1261 - - - - - - -	6,928	9,248	7,961	7,918	8,292
1262 - - - - - - -	7,087	9,657	6,856	6,283	7,152
Total - - - -	31,986	43,924	31,604	33,525	35,877
Average - - -	6,397	8,785	6,333	6,705	7,175
1263 - - - - - - - -	7,050	9,700	7,005	7,650	7,500

* Annual collections of five irrigated villages included above, under the Bickavole Talook.

Commissioner's Office,
Vizagapatam, 9 July 1855

J. Goldingham,
Commissioner.

No. 5.—STATEMENT showing the PROFITS derived from the *Godavery* Annicut to Government

ITEMS	Fuslies in which the Water was given	Villages	Average Collections of Five Years	Collections in respective Fuslies.	Increase to Columns 3 and 4.			Centage.		
					From the Godavery Water	From other Causes.	TOTAL.	From the Godavery Water.	From other Causes	TOT
	1	2	3	4	5	6	7	8.	9	10
sual Cultivation under the Toolya Bhaga Channel	In - 1257 -	8	24,477	29,743	2,540	2,726	5,266	10 37	11 14	21 51
	Up to 1258 -	31	63,820	90,601	16,900	9,881	26,781	26 48	15 48	41 96
	" 1259 -	32	65,311	98,075	22,415	10,319	32,764	34 37	15 10	50 17
	" 1260 -	34	66,082	1,06,748	30,269	10,397	40,666	45 81	1 73	61 54
	" 1261 -	36	68,034	1,15,449	36,847	10,568	47,415	54 16	15 53	69 69
	" 1262 -	38	76,566	1,23,596	36,411	10,619	47,030	47 56	13·86	61 43
	" 1263 -	45	83,942	1,36,041	40,789	11,310	52,099	48 59	13 47	62 3
	TOTAL - -	–	4,48,232	7,00,253	1,86,201	65,820	2,52,021	41·54	14 69	53 23
Add estimated profit to Government in the Talooks which are irrigated only in 1263 fusly - - -					13,038	- -	1,30,038			
					3,16,239	65,820	3,82,059			

Note.—The figures in 5 and 6 Columns have been inserted on a consideration of each separate village. Most of the 45 llages have tanks, and possessed wet cultivation before the Annicut was built. The allowance made in each case at the scretion of the framer of the estimate

ESTIMATE of the Loss prevented by the Timely Distribution of the *Godavery* Water in Fusly 1263.

NAMES OF TALOOKS	Demand of Fusly 1263	Estimate of the Average Sist of Five Years, from 1253 to 1257 Fusly, that might have been Collected in Fusly 1263	Amount to be considered as saved to Government from the Godavery Water being made available.	Of which probable amount of Remission given.	Net Revenue saved
1	2	3	4	5	6
ota Ramchundrapuram - - - -	1,33,168	1,05,132	28,036	3,000	25,036
agarum - - - - - - -	1,07,578	81,704	25,874	10,000	15,874
oondy - - - - - - -	1,43,995	1,09,867	34,128	- - -	34,128
Total - - -	3,84,741	2,[illegible]3,703	88,038	13,000	75,038
entapaud - - - - - - - - - - - - - - - - - -					5,000
ykaloor, including Colair Lake - - - - - - - - - - - - - - - -					50,000
				Total - - -	55,000
				GRAND TOTAL - -	1,30,038

Commissioner's Office,
Vizagapatam, 9 July 1855.

J. Goldingham,
Commissioner

No. 6.—STATEMENT showing the former COLLECTIONS and present ASSESSMENT of the Villages cultivated with Water from the Annicut, and the Descriptions of Land cultivated in Fusly 1263, in the District of *Rajahmundry*

No	TALOOKS	Number of Villages.	THE WHOLE VILLAGE.										IRRIGATED BY THE ANNICUT FOR FUSLY 1263				
			Average Collections of Five Years before the Construction of Annicut.	Benz of Fusly 1262	Benz of Fusly 1263	Benz of Fusly 1264	Comparison between the Benz of Fusly 1262 and that of Fusly 1263.		Comparison between the Benz of Fuslies 1263 and 1264.		Comparison between Collections of Five Years before the Construction of Annicut and Benz of Fusly 1264		USUAL WET				
							Increase.	Decrease.	Increase	Decrease.	Increase.	Decrease.	Land.	Assessment before the Irrigation of the Annicut	Assessment of Fusly 1263	Difference between the Two.	Average of Assessment per Pootty for Fusly 1263
	1	2.	3.	4	5.	6	7.	8.	9	10.	11.	12.	13	14	15.	16.	17.
			Co.'s Rs	*Co.'s Rs*	*Co.'s Rs.*	*Co.'s Rs.*	*Co.'s Rs.*	*Co.'s Rs*	*Co.'s Rs.*	*Co.'s Rs*	*Co'.s Rs.*	*Co.'s Rs.*	*Pootties.*	*Rs.*	*Rs.*	*Rs*	*Rs. a. p.*
1	Bickavole - -	40	51,730	1,01,191	1,04,181	1,06,271	2,990	- -	2,090	- -	54,541	- -	1,302	40,115	46,873	6,758	36 – –
2	Caupaveram -	7	16,767	27,408	27,408	27,408	- -	- -	- -	- -	10,641	- -	258	7,364	13,723	6,359	53 3 –
	TOTAL - - -	47	68,497	1,28,599	1,31,589	1,33,679	2,990	- -	2,090	- -	65,182	- -	1,560	47,479	60,596	13,117	38 14 –
3	Amlapuram -	8	12,945	18,533	18,707	18,725	174	- -	18	- -	5,780	- -	117	3,200	3,289	89	28 2 –
4	Nagaram - -	18	44,265	47,889	48,109	48,108	220	- -	- -	1	3,843	- -	109	4,614	4,614	- -	42 6 –
5	Cota Ramachendrapuram - -	14	21,025	23,175	23,409	23,581	234	- -	172	- -	2,556	- -	168	5,116	5,120	4	30 8 –
6	Rauley - -	2	3,468	4,605	4,614	4,619	9	- -	5	- -	1,151	- -	- -	- -	- -	- -	- -
7	Mogulloor - -	29	83,843	90,920	90,888	91,021	- -	32	133	- -	7,178	- -	476	11,553	11,553	- -	24 4 –
8	Tanookoo - -	26	53,010	66,936	68,070	68,063	1,134	- -	- -	7	15,053	- -	22	899	899	- -	40 14 –
9	Woondy - -	81	90,251	1,30,466	1,30,941	1,30,805	475	- -	- -	136	40,554	- -	2,677	79,730	75,387	4,343	28 2 –
	TOTAL - - -	225	3,77,304	5,11,123	5,16,327	5,18,601	5,236	32	2,418	144	1,41,297	- -	5,129	152,591	161,458	8,867	31 8 –
	Land at eight acres per pootty - -	- -	- -	- -	- -	- Net	5,204	- -	2,274	- -	- -	- -	41,032	- -	161,458	- -	3 15 –

No 6.—Statement showing the former Collections and present Assessment of the Villages cultivated with Water from the Annicut, and the Descriptions of Land, &c.—*continued*

No.	TALOOKS	IRRIGATED BY THE ANNICUT FOR FUSLY 1263																			
		DRY CONVERTED INTO WET.					DRY CONVERTED INTO GARDEN					SUGAR-CANE GARDENS.					TOTAL.				
		Land 18	Assessment before the Irrigation of the Annicut 19	Assessment of Fusly 1263 20	Difference between these Two 21	Average Assessment per Pootty for Fusly 1263 22	Land 23	Assessment before the Irrigation of the Annicut 24	Assessment of Fusly 1263 25	Difference between these Two 26	Average of Assessment per Pootty for Fusly 1263 27.	Land. 28	Assessment before the Irrigation of the Annicut 23	Assessment of Fusly 1263 30	Difference between these Two 31	Average of Assessment per Pootty 32.	Land 33	Assessment before the Irrigation of the Annicut 34	Assessment of Fusly 1263. 35	Difference between these Two 35.	Average of Assessment per Pootty of Fusly 1263 37
		Ps.	*Rs.*	*Rs.*	*Rs.*	*Rs a.*	*Ps*	*Rs*	*Rs*	*Rs*	*Rs a*	*Ps*	*Rs*	*Rs*	*Rs*	*Rs a.*	*Ps*	*Rs*	*Rs*	*Rs.*	*Rs a.*
1	Bickavole - -	503	11,115	16,198	5,083	32 3	-	-	-	-	- -	-	-	-	-	- -	1,805	51,230	63,071	11,841	34 15
2	Caupaveram -	52	1,506	1,775	269	34 2	-	-	-	-	- -	-	-	-	-	- -	310	8,870	15,498	6,628	60 -
	Total - - -	555	12,031	17,973	5,352	32 6	-	-	-	-	- -	-	-	-	-	- -	2,115	60,100	78,569	18,469	37 2
3	Amlapuram -	1	29	30	1	30 -	-	-	-	-	- -	-	-	-	-	- -	118	3,229	3,319	90	28 2
4	Nagaram - -	-	- -	- -	-	- -	3	87	87	-	29 -	9	679	679	-	75 8	121	5,380	5,380	- -	44 7
5	Cota Ramachendrapuram - -	19	705	705	-	37 2	2	161	161	-	80 8	-	-	-	-	- -	189	5,982	5,986	4	31 11
6	Rauley - -	1	38	38	-	38 -	- ½	18	18	-	26 -	-	-	-	-	- -	1½	51	51	- -	34 -
7	Mogulloor - -	16	416	416	-	41 9	67	3,643	3,643	-	54 6	3	219	219	-	73 -	556	15,831	15,831	- -	28 8
8	Tanookoo - -	15	477	477	-	31 14	6	248	248	-	41 5	T 2	4	4	-	40	43	1,628	1,628	- -	37 15
9	Weondy - -	-	- -	- -	-	- -	-	-	-	-	- -	-	-	-	-	- -	2,677	79,730	17,387	4,343	28 2
	Total - - -	601	14,286	19,639	5,353	32 11	78	4,152	4,152	-	53 4	12	902	902	-	75 3	5,820	171,931	186,151	14,220	32 -
	Land at eight acres per pooty - -	4,808	- -	19,639	-	4 1	624	-	4,152	-	6 10	96	-	902	-	9 6	46,560	- -	186,151	- -	4 -

No. 6.—STATEMENT showing the former Collections and present Assessment of the Villages cultivated with Water from the Annicut, and the Descriptions of Land, &c.—*continued.*

No	TALOOKS.	DESCRIPTION OF CROPS.														
		First Crop Fine Paddy, and Second Crop Coarse Paddy					First Crop Fine Paddy, Second Crop Gingily Oil Seeds, &c					A Single Crop of Sugar Cane or Fine Paddy				
		Land. 38.	Assessment before the Irrigation of the Annicut 39	Assessment of Fusly 1263 40.	Difference between these two. 41.	Average of Assessment per Pootty for Fusly 1263. 42.	Land. 43.	Assessment before the Irrigation of the Annicut 44.	Assessment of Fusly 1263. 45.	Difference between these two 46.	Average of Assessment per Pootty for Fusly 1263. 47	Land. 48.	Assessment before the Irrigation of the Annicut. 49.	Assessment of Fusly 1263. 50.	Difference between these two. 51.	Average of Assessment per Pootty for Fusly 1263 52.
1	Bickavole -	351	10,695	15,841	5,146	45 2 -	63	3,701	4,428	727	70 6 -	1,391	36,834	42,802	5,968	30 12 -
2	Caupaveram - -	93	3,371	6,450	3,079	69 6 -	25	741	1,596	855	63 14 -	192	4,758	7,452	2,694	38 13 -
	TOTAL - - -	444	14,066	22,291	8,225	50 3 -	88	4,442	6,024	1,582	68 8 -	1,583	41,592	50,254	8,662	31 12 -
3	Amlapuram - -	118	3,229	3,319	90	28 2 -	-	—	—	—	—	-	—	—	—	—
4	Nagaram - -	-	- -	- -	- -	- -	21	1,913	1,913	- -	91 1 -	100	3,467	3,467	- -	34 11 -
5	Cota Ramachendrapuram - -	1	62	62	- -	62 - -	188	5,920	5,924	4	31 8 -	-	—	—	—	—
6	Rauley - - -	-	- -	- -	- -	- -	-	- -	- -	- -	- -	1½	51	51	- -	34 - -
7	Mogulloor - -	-	- -	- -	- -	- -	-	- -	- -	- -	- -	556	15,831	15,831	- -	28 8 -
8	Tanookoo - -	31	1,147	1,147	- -	37 - -	12	477	477	- -	39 12 -	T 2	4	4	- -	40 - -
9	Woondy - - -	-	- -	- -	- -	- -	-	- -	- -	- -	- -	2,677	79,730	75,387	4,343	28 2 -
	TOTAL - - -	594	18,504	26,819	8,315	45 3 -	309	12,752	14,338	1,586	46 6 -	4,917	140,675	144,994	4,319	29 8 -
	Land at eight acres per pootty - -	4,752	- -	26,819	- -	5 10 -	2,472	- -	14,338	- -	5 13 -	30,336	- -	144,994	- -	3 11 -

Commissioner's Office, Vizagapatam,
9 July 1855

(signed) *J. Goldingham,*
Commissioner.

No. 7.—STATEMENT showing the WET LANDS of *Balabhadrapuram* depending on the Annicut Irrigation

Items, Description of Crops, and Classes	NAMES of PUMPOOS 1	Land. 2			Assessment before the Irrigation. 3			Rents for Fusly 1264. 4			Average per Pootty						Average per Acre.					
											Assessment before the Irrigation. 5.			Rents for Fusly 1264. 6			Assessment before the Irrigation. 7			Rents for Fusly 1264. 8		
Usual Wet Double Crops		*P.*	*t.*	*m.*	*Rs*	*a*	*p*	*Rs.*	*a*	*p*	*Rs*	*a*	*p*	*Rs.*	*a.*	*p.*	*Rs*	*a*	*p*	*Rs.*	*a.*	*p.*
1st Class	Nootalaparadu - -	1	2	12	50	8	–	93	–	–	44	6	4	81	12	2	5	8	9	10	3	6
	Muttaloo Chalaka -	1	2	8	67	10	–	98	5	–	60	1	10	87	6	2	7	8	8	10	14	9
	Joovva Doddi Chanoo	3	2	8	146	4	–	232	4	–	46	12	10	74	5	2	5	13	7	9	4	8
	Bari Chinta Chanoo -	0	15	0	40	1	–	40	1	–	53	6	8	53	6	8	6	10	10	6	10	10
	Mungalavani Mulloo -	0	2	4	–	8	–	7	–	–	4	7	2	62	3	–	–	8	11	7	12	4
	Valagala Dibba Seetamamulloo, &c	0	15	0	19	8	–	70	4	–	26	–	–	93	10	8	3	4	–	11	11	4
	Coommaragati Chanoo	1	3	12	83	–	–	146	11	–	69	14	3	123	7	8	8	11	9	15	6	11
	Panti Dumpa - -	1	0	0	42	–	–	56	–	–	42	–	–	56	–	–	5	4	–	7	–	–
	Vellagala Diddy -	1	0	0	40	–	–	110	–	–	40	–	–	110	–	–	5	–	–	13	12	–
	Doyyala Murrigurvoo	0	10	0	13	–	–	46	1	–	26	–	–	92	2	–	3	4	–	11	8	3
	Ravi Chilakgurvoo -	0	5	0	9	15	–	25	8	–	39	12	–	102	–	–	4	15	8	12	12	–
	Aavoolagurvoo - -	1	0	0	28	–	–	62	–	–	28	–	–	62	–	–	3	8	–	7	12	–
	Cotta Chervoo Pumpoo	6	15	0	167	8	–	15	5	–	24	12	5	76	5	6	3	1	7	9	8	8
	Taudibunda - -	0	18	12	41	8	–	73	1	–	44	4	3	77	15	–	5	8	6	9	11	10
	Voommaditota - -	0	10	0	13	–	–	41	4	–	26	–	–	82	8	–	3	4	–	10	5	–
	Pakeeroovani Mulloo -	0	7	8	20	–	–	33	–	–	53	5	4	88	–	–	6	10	8	11	–	–
	Enalapaudoo, &c -	0	10	0	32	8	–	82	–	–	65	–	–	164	–	–	8	2	–	20	8	–
	Rauvickelak Poottichilkah.	0	10	0	16	–	–	36	14	–	32	–	–	73	12	–	4	–	–	9	3	6
	Garoogoudagurvoo -	1	0	12	35	11	–	94	13	–	34	6	5	91	6	–	4	4	10	11	6	9
	Dayyala Murrigurvoo	0	7	8	10	–	–	46	1	–	26	10	8	122	13	4	3	5	4	15	5	8
	Vuntemamedigurvoo -	0	6	4	5	8	–	16	–	–	17	9	8	51	3	4	2	3	3	6	6	5
	Gamalla Vaani Chervoo Venaka	1	15	0	75	9	–	227	14	–	13	2	10	130	3	5	5	6	4	16	4	5
	Eachervoolonoo (in this Tank)	0	7	8	9	–	–	34	–	–	24	–	–	90	10	8	3	–	–	11	5	4
	Total - - -	25	7	0	966	10	–	2,187	6	–	38	10	8	87	8	–	4	13	4	10	15	–
2d Class	Tata Chanoo - -	0	6	4	11	8	–	14	–	–	36	12	8	45	10	–	4	9	7	5	11	3
	Vunkala Chanoo -	0	6	4	15	–	–	20	6	–	48	–	–	65	3	4	6	–	–	8	2	5
	Bheemoodi Chanoo -	1	0	0	26	7	–	73	10	–	26	7	–	73	10	–	3	4	10	9	3	3
	Sary Pumpoo - -	0	15	0	28	–	–	74	6	–	37	5	4	99	12	6	4	10	8	12	7	7
	Nadi Mulloo, &c. -	0	12	8	25	8	–	56	–	–	40	12	8	89	9	7	5	1	7	11	3	2
	Banka Mulloo - -	0	2	0	2	3	–	4	–	–	21	14	–	40	–	–	2	11	9	5	–	–
	Pauti Dumpa - -	0	4	2	6	5	–	9	–	–	30	9	8	43	10	2	3	13	2	5	7	3
	Canracolla Chanoo -	0	17	8	26	–	–	61	10	–	29	11	5	70	6	10	3	11	5	8	12	10
	Chucta Venkiah Chanoo	0	5	0	6	–	–	22	4	–	24	–	–	89	–	–	3	–	–	11	2	–
	Venkatramoodi Chanoo	0	7	8	8	–	–	37	2	–	21	5	4	99	–	–	2	10	8	12	6	–
	Jummi Chanoo - -	0	10	0	22	–	–	50	–	–	44	–	–	100	–	–	5	8	–	12	8	–
	Doodakoolavani Mulloo	0	4	8	8	–	–	20	7	–	35	2	–	90	12	2	4	6	3	11	5	6
	Banuda Pogoo - -	0	2	8	6	–	–	12	–	–	48	–	–	96	–	–	6	–	–	12	–	–
	Beeti Pumpoo - -	1	0	0	47	–	–	95	5	–	47	–	–	95	5	–	5	14	–	11	14	8
	Taudi Pumpoo - -	0	15	0	30	–	–	70	–	–	40	–	–	93	5	4	5	–	–	11	10	8
	Chinna Tummoya Chanoo.	0	5	0	14	–	–	32	–	–	56	–	–	128	–	–	7	–	–	16	–	–
	Addalavani Chanoo, &c	0	15	0	26	10	–	60	–	–	35	8	–	80	–	–	4	7	–	10	–	–
	Choudoo Chinta Bundaloo.	1	0	0	4	–	–	24	–	–	4	–	–	24	–	–	–	8	–	3	–	–
	Duyyala Murri Gurvoo	1	0	0	27	–	–	87	2	–	27	–	–	87	2	–	3	6	–	10	14	3
	Ravi Chalka Gurvoo -	0	5	0	12	–	–	17	–	–	48	–	–	68	–	–	6	–	–	8	8	–
	Lom Beedoo - -	1	0	0	32	–	–	73	15	–	32	–	–	73	15	–	4	–	–	9	3	10
	Mulindi Veerappa Chanoo.	0	15	0	34	–	–	62	8	–	45	5	4	83	5	4	5	10	8	10	6	8
	Surreddy Tota Gurvoo	0	12	8	27	3	–	52	8	–	43	8	–	84	–	–	5	7	–	10	8	–
	Auvala Gurvoo - -	0	7	8	3	12	–	15	–	–	10	–	–	40	–	–	1	4	–	5	–	–
	Total - - -	13	8	2	448	8	–	1,044	3	–	34	6	–	80	4	–	4	4	9	10	–	6

No 7.—STATEMENT showing the Wet Lands of *Balabadrapuram* depending on the Annicut Irrigation—*continued.*

Description of Crops, and Classes.	NAMES of PUMPOOS 1.	Land 2.	Assessment before the Irrigation. 3	Rents for Fusly 1264. 4	Average per Pootty. Assessment before the Irrigation. 5	Average per Pootty. Rents for Fusly 1264. 6.	Average per Acre. Assessment before the Irrigation. 7	Average per Acre. Rents for Fusly 1264. 8
		P. t. m.	*Rs a. p.*	*Rs. a. p.*	*Rs. a. p*	*Rs. a. p.*	*Rs a. p.*	*Rs. a. p.*
Crop d Class	Eata Chanoo - -	0 18 12	20 12 –	33 6 –	22 1 1	85 9 7	2 12 2	4 7 2
	Moogoogala Beedoo -	2 10 0	93 15 6	107 7 –	38 6 2	42 15 7	4 12 9	5 5 11
	Vankala Chanoo -	0 5 0	5 – –	35 3 –	20 – –	140 12 –	2 8 –	17 9 6
	Venkala Chanoo -	0 12 8	20 – –	65 2 –	32 – –	104 3 2	4 – –	13 – 5
	Poontanoob Chanoo -	1 5 0	34 – –	83 15 –	27 3 3	67 2 5	3 6 5	8 6 4
	Samunti Narrainma Chanoo	1 0 0	33 – –	56 14 –	33 – –	56 14 –	4 2 –	7 1 9
	Poli Maira Chanoo -	0 5 0	5 – –	20 – –	20 – –	80 – –	2 8 –	10 – –
	Gooravoya Chanoo -	0 12 8	28 8 –	33 2 –	45 9 7	53 – –	5 11 2	6 10 –
	Garike Chilka - -	0 15 0	25 14 –	70 10 –	34 8 –	94 2 8	4 5 –	11 12 4
	Garike Chilka - -	0 10 0	16 8 –	56 – –	33 – –	112 – –	4 2 –	14 – –
	Taudibunda - -	0 7 8	8 – –	20 – –	21 5 4	53 5 4	2 10 8	6 10 8
	Maudigavani Chilka-kinda.	0 12 8	6 – –	28 – –	9 9 7	44 13 –	1 3 2	5 9 8
	Devoodoo Enam, or Enam of the Idol.	0 17 8	5 11 4	21 3 –	6 8 5	24 3 5	– 13 1	3 – 5
	Total - - -	10 11 4	302 4 10	630 14 –	27 8 –	57 2 8	3 7 –	7 2 4
4th Class	Vankala Chanoo	1 10 0	28 – –	75 3 –	18 10 8	50 2 –	2 5 4	6 4 3
	Poonta Nooti Chanoo Daré.	0 10 0	3 6 –	8 – –	6 12 –	16 – –	– 13 6	2 – –
	Vankala Chanoo -	0 5 0	8 – –	9 14 –	32 – –	39 8 –	4 – –	4 15 –
	Vankala Chanoo -	0 5 0	2 – –	8 – –	8 – –	32 – –	1 – –	4 – –
	Venkala Chanoo -	0 12 8	5 10 –	15 12 –	9 – –	25 3 4	1 2 –	3 2 5
	Padmaraj Churvoolo Mooragoda.	0 7 8	7 7 –	27 15 –	19 13 4	74 8 –	2 7 8	9 5 –
	Poojari Enam kinda Choudoo	1 0 0	17 – –	24 4 –	17 – –	24 4 –	2 2 –	3 – 6
	Pudmaraj Churvoo koommoo	1 6 8	20 – –	48 2 –	15 1 6	36 5 2	1 14 2	4 8 8
	Laloy Churvoolo Choudoo	4 0 0	4 – –	26 4 –	1 – –	6 9 –	– 2 –	– 13 1
	Eachurvoo Venaka -	1 10 0	10 – –	16 5 –	6 10 8	10 14 –	– 13 4	1 5 9
	Choudoo - - -	5 0 0	22 – –	38 7 –	4 6 5	7 11 –	– 8 10	– 15 4
	Choudoo - - -	1 0 0	6 – –	13 12 –	6 – –	13 12 –	– 12 –	1 11 6
	Choudoo - - -	7 15 0	53 4 –	74 1 –	6 13 11	9 9 2	– 13 9	1 3 2
	Choudoo - - -	5 0 0	28 9 –	35 2 –	5 11 5	7 – 5	– 11 5	– 14 1
	Choudoo - - -	4 10 0	33 – –	48 9 –	7 5 4	10 12 8	– 14 8	1 5 7
	Choudoo Seetana Churvoolopola Valapala.	21 14 2	56 2 –	218 – –	2 9 4	10 – 9	– 5 2	1 4 1
	Choudoo - -	6 0 0	24 – –	53 5 –	4 – –	8 14 2	– 8 –	1 1 9
	Choudoo - - -	2 0 0	12 – –	28 13 –	6 – –	14 6 6	– 12 –	1 12 10
	Choudoo - - -	8 5 0	60 – –	84 – –	6 1 –	10 2 11	– 12 1	1 4 4
	Choudoo - - -	2 0 0	7 – –	32 9 –	3 8 –	16 4 6	– 7 –	2 – 7
	Choudoo - - -	3 15 0	25 – –	28 4 –	6 10 8	7 8 6	– 13 4	– 15 1
	Choudoo - - -	4 10 0	33 12 –	52 6 –	7 8 –	11 10 2	– 15 –	1 7 3
	Chondoo - - -	2 0 0	5 – –	23 1 –	2 8 –	11 8 6	– 5 –	1 7 1
	Peotti Chulka - -	0 5 0	2 – –	10 – –	8 – –	40 – –	1 – –	5 – –
	Chiti Venkatrajchervoo Vanaka	0 10 0	10 – –	21 9 –	20 – –	43 2 –	2 8 –	5 6 3
	Vooppara Mulloo -	0 6 4	6 – –	10 – –	19 3 4	32 – –	2 6 5	4 – –
	Total - - -	85 16 4	479 2 –	1,031 9 0	5 9 4	12 – –	– 11 2	1 8 –
	Total of single crop -	109 16 .4	1,229 14 10	2,706 10 –	11 .2 8	24 10 –	1 6 4	3 1 3
	GRAND TOTAL - -	135 8 4	2,196 8 10	4,894 – –	16 4 –	36 4 –	2 – 6	4 8 6

Commissioner's Office, Vizagapatam,
9 July 1855.

(signed) *J. Goldingham,*
Commissioner.

No. 8.—PRICES of GRAIN per *Madras* Garce.

FUSLIES	RAJAHMUNDRY.			MASULIPATAM.			GUNTOOR			
	White Paddy.	Black Paddy.	Jonnaloo	White Paddy.	Black Paddy.	Jonnaloo	White Paddy.	Black Paddy.	Jonnaloo	Varagloo.
1	2.	3.	4.	5.	6.	7	8.	9.	10	11.
	Rs.	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*	*Rs.*
1223 - - -	146	137	173	146	134	173	172	148	181	120
1224 - - -	117	109	137	120	107	169	132	123	160	125
1225 - - -	101	89	122	106	86	145	121	106	150	108
1226 - - -	90	87	108	125	103	149	137	118	141	105
1227 - - -	91	82	113	148	111	175	149	123	193	130
1228 - - -	105	95	120	148	121	220	164	147	239	176
1229 - - -	94	84	127	114	93	163	120	124	154	134
1230 - - -	85	75	132	120	94	182	139	114	192	124
1231 - - -	98	89	118	134	108	177	131	122	150	125
Average - -	103	94	128	129	106	172	141	125	174	128
1232 - - -	101	91	124	121	110	159	154	118	199	133
1233 - - -	165	158	200	148	134	190	165	141	187	114
1234 - - -	171	150	190	178	143	216	178	169	182	158
1235 - - -	137	122	143	150	117	178	175	137	151	138
1236 - - -	86	76	96	107	88	117	103	97	112	107
1237 - - -	77	71	75	92	72	96	92	70	97	75
1238 - - -	72	62	76	95	73	102	101	82	124	97
1239 - - -	84	76	92	94	82	94	122	94	129	110
1240 - - -	78	69	88	98	81	120	111	86	122	90
1241 - - -	64	58	78	71	66	104	89	61	111	86
Average - -	104	93	116	115	96	158	129	107	141	114
1242 - - -	111	103	163	143	113	235	192	154	192	190
1243 - - -	168	158	209	178	137	246	242	200	195	223
1244 - - -	95	87	115	119	97	173	123	127	151	143
1245 - - -	63	57	71	77	64	119	97	87	97	90
1246 - - -	81	74	90	86	74	105	115	102	100	84
1247 - - -	90	79	84	95	75	107	100	101	98	74
1248 - - -	139	125	164	140	122	157	167	129	167	167
1249 - - -	110	91	119	94	78	102	126	100	119	82
1250 - - -	103	91	127	96	86	108	104	85	101	72
1251 - - -	63	55	64	76	60	83	90	72	77	53
Average - -	102	92	121	110	91	143	136	116	130	111
1252 - - -	58	50	54	66	54	67	79	65	59	42
1253 - - -	54	46	46	64	49	54	81	65	46	34
1254 - - -	58	52	59	68	50	64	87	67	69	45
1255 - - -	85	74	92	97	85	130	115	103	135	98
1256 - - -	86	78	82	101	88	116	116	103	125	95
Average - -	68	60	66	70	65	88	96	81	87	63
1257 - - -	79	70	81	89	71	114	104	90	123	83
1258 - - -	71	65	69	81	64	105	99	83	104	74
1259 - - -	67	62	64	90	72	106	92	81	97	67
1260 - - -	63	58	76	94	76	130	101	95	125	85
1261 - - -	59	52	61	81	66	117	92	86	123	83
1262 - - -	57	52	68	67	55	101	80	61	109	74
1263 - - -	92	88	121	105	92	135	120	101	153	112
Average - -	70	64	78	87	71	115	98	85	119	84

Commissioner's Office, }
Vizagapatam, 9 July 1855. }

(signed) *J Goldingham,*
Commissioner.

No. 9.—STATEMENT showing the Extent and Assessment of the Land Irrigated by the Annicut, and the Increase of Revenue therefrom in the District of *Rajahmundry*.

FUSLIES	Dry Converted into Wet.					Usual Wet.					Total.				
	Land	Assessment of Fusly 1256	Assessment of each Fusly subsequent to the Irrigation	Increase	Centage.	Land.	Assessment of Fusly 1256.	Assessment of each Fusly subsequent to the Irrigation.	Increase	Centage.	Land	Assessment of Fusly 1256.	Assessment of each Fusly subsequent to the Irrigation.	Increase.	Centage.
1	2	3	4	5	6.	7	8.	9	10.	11	12.	13.	14	15.	16.
	Poots	*Rs*	*Rs.*	*Rs.*	*Rs. a p*	*Poots*	*Rs*	*Rs*	*Rs*	*Rs. a. p.*	*Poots.*	*Rs.*	*Rs*	*Rs.*	*Rs a p*
1257 - -	–	–	- -	–	- - -	43	1,862	2,662	800	42 14 6	43	1,862	2,662	800	42 14 6
1258 - -	20	588	907	319	52 9 7	321	9,747	11,830	2,083	21 5 6	341	10,335	12,737	2,102	23 8 9
1259 - -	180	3,166	5,128	1,962	61 15 6	526	19,047	25,563	6,516	34 3 6	706	22,213	30,691	8,478	33 10 6
1260 -	67	983	2,097	1,114	113 4 6	756	24,818	35,678	11,860	43 12 7	823	25,801	37,775	11,974	46 6 8
1261 - -	115	1,931	3,344	1,413	83 8 6	930	29,603	44,369	14,766	49 14 2	1,045	31,534	47,713	16,179	50 5 11
1262 - -	431	8,882	13,984	5,102	57 7 4	1,501	45,928	58,258	12,330	26 3 2	1,932	54,810	72,243	17,433	31 9 2
TOTAL - -	–	-	- -	9,910	63 11 9	–	–	- -	47,355	36 2 5	–	–	- -	57,265	39 1 3

Teerwa Jasty on Enams - - - - - - -	1,431
TOTAL - - -	58,696
Deduct Loss from Lands taken up by the Channels -	16,073
Remaining -	42,623

Commissioner's Office, Vizagapatam,
9 July 1855.

(signed) *J Goldingham*,
Commissioner.

No. 10.—STATEMENT showing the Particulars of Lands Irrigated and Unirrigated up to the Fusly 1262 in the District of *Rajahmundry*.

Items	FUSLIES	Irrigated.				Unirrigated.				Total.			
		Assessment of Fusly 1256 previous to the construction of the Annicut.	Assessment of each Fusly subsequently.	Increase.	Centage	Assessment of Fusly 1256 previous to the construction of the Annicut.	Assessment of each subsequent Fusly.	Increase	Centage.	Assessment of Fusly 1256 previous to the construction of the Annicut	Assessment of each subsequent Fusly.	Increase	Centage.
	1	2.	3	4.	5	6	7.	8.	9.	10.	11.	12	13.
		Rs	*Rs.*	*Rs.*	*Rs. a p*	*Rs*	*Rs*	*Rs.*	*Rs. a. p.*	*Rs*	*Rs*	*Rs.*	*Rs a p.*
Old Estates,	1257 - -	1,862	2,662	800	42 15 1	1,201,192	1,252,472	51,280	4 4 4	1,203,054	1,255,134	52,080	4 5 3
	1258 - -	10,335	12,737	2,403	23 3 10	1,201,193	1,298,171	96,978	8 1 2	1,211,528	1,310,908	99,380	8 3 4
	1259 - -	22,213	30,691	2,478	38 2 8	1,201,192	1,295,115	93,923	7 13 1	1,223,405	1,325,806	102,401	8 3 11
	1260 - -	25,801	37,775	11,974	46 6 6	1,201,193	1,333,584	132,391	11 – 4	1,226,994	1,371,359	144,365	11 12 3
	1261 - -	30,394	47,512	16,578	53 9 5	1,201,192	1,370,514	169,322	14 1 6	1,232,126	1,418,026	185,900	15 1 5
	1262 - -	54,212	72,210	17,998	33 3 2	1,201,192	1,365,580	164,388	13 10 11	1,255,404	1,437,790	183,386	14 8 5
	Total - -	- -	–	58,230	40 – 11	- -	- -	708,282	9 13 3	- -	- -	766,312	16 6 9
New Estates	1259 - -	- -	–	–	- -	- -	- -	3,491	- -	- -	3,491	3,491	—
	1260 - -	- -	–	–	- -	- -	- -	7,426	- -	- -	7,426	7,426	—
	1261 - -	600	841	241	40 4 2	- -	- -	36,438	- -	600	37,279	36,679	—
	1262 - -	599	824	225	37 9 4	- -	- -	37,315	- -	599	38,139	37,540	—
	Total - -	- -	–	466	38 13 8	- -	- -	84,670	- -	- -	- -	85,136	—
	GRAND TOTAL	- -	–	58,696	40 1 –	- -	- -	792,952	11 – –	- -	- -	851,648	11 9 4

Commissioner's Office, Vizagapatam,
9 July 1855.

(signed) *J. Goldingham*,
Commissioner

No 11. –COMPARATIVE STATEMENT of the Expense of LAND and WATER CARRIAGE for Short and Long Distances, in the Sub-Division of *Rajahmundry*

No	TO AND FROM WHAT PLACE.			LAND	WATER		RATE PER MILE	WATER		REMARKS.
	VILLAGES	Distance in Miles,	ARTICLES	Hire paid for Bullocks, &c., per Pootty.	Hire for Dhonies at present	Probable Price when Channels are full	Land	Cost at present.	Probable Cost in future	
	1	2	3	4.	5.	6	7	8	9	10
				Rs. a p.	*Rs a p*	*Rs a p*	*Rs a p*	*Rs a. p*	*Rs a p*	
1	From Woondy to Cocanada on Gosta Nuddy	70	Paddy - - - -	8 – –	3 – –	– 14 –	– 1 10	– – 8	– – 2⅔	
2	From Woondy to Ellore on Colair	40	Ditto - - - -	4 – –	1 – –	– 6 –	– 1 5	– – 4	– – 1⅓	
3.	From Polaveram to Woondy on Gosta Nuddy	60	- - 1,000 Bamboos, including the water carriage on the Godavery	19 – –	9 – –	2 – –	– 5 1	– 2 5	– – 6¼	- - The price of 1,000 Bamboos at Polaveram is 6 rupees, the former selling price at Woordy was 25 rupees, and is now 15 rupees. The difference between the cost and selling price is put down as the hire for carriage
4.	From Samulcottah to Rajahmundry	55	Per candy of 20 maunds -	2 – –	1 – –	– 8 –	– – 7	– – 3½	– – 1¾	- - The great market for this article is Vijeswaram, where the price fluctuates from 40 to 50 rupees the candy None but the richest ryots can afford the land carriage from Rajahmundry Local purchases are made from the poor class at from 15 to 20 rupees the candy, and the profit to the sowcar is at least 50 per cent *Note* —Mr Taylor has not mentioned the article
5	From Tanookoo to Narsapoor on Palcole Channel	25	- - Bengal and Horse Gram, Oil Seeds, &c	2 8 –	-	– 8 –	– 1 7	- -	– – 4	Too high.
6	From Woondy to Narsapoor	20	Paddy - - - -	2 – –	- -	– 4 –	– 1 7	- -	– – 2½	
7	From Palcole to Narsapoor -	6	- - Bengal and Horse Gram Oil Seeds, &c	– 12 –	– 4 –	– 2 –	– – 8	- -	– – 4	This estimate is probably too high
8	From Narsapoor to Rajahmundry	45	- - Bearers for two native Palankeens Canady men two	12 – –	3 – –	- - -	– 4 3	– 1 1	- -	- - Small dingies capable of holding six or eight persons have been hired at this rate to Conney Court suitors, traders, and their attendants, from Nursapoor to Rajahmundry on the Palcole Channel
9.	From Narsapoor to Chettypett	36	Jaggery - - - -	– 12 –	– 3 –	– 3 –	– – 4	- -	– – 1	- - This communication being now closed, the Unkkula is used instead The comparison includes two Palankeens only for the heads of two families, and the expense by water is one fourth Large quantities of jaggery are sent to the Rajahmundry sugar works, and the demand for this article will probably increase very considerable The superintendent of Messrs Arbuthnot & Co.'s factory is so sensible of the value of water carriage, that he has already constructed a number of boats for the conveyance of the supply of this article to Rajahmundry and of sugar, &c to the coast

Commissioner's Office, Vizagapatam,
9 July 1855

(signed) *J Goldingham,*
Commissioner

No 12.—RETURN from Dry and Wet Crops on a Pootty of Irrigated Fallow Land of the First Class.

Years	Crop.	Dry Land. Nature of Cultivation.	Expense.	Return	Profit
			Rs. a p.	Rs a. p.	Rs. a. p
1st.	- - Poonasa Black Paddy, Red Gram, &c.	- - Turning with Crowbar and Ploughing	32 - -	80 - -	
	Pyra Cholum, Lamp Oil Seeds, Bengal and Horse Gram, Cotton, &c	- - Labourer's hire for Sowing, Cutting, Weeding, &c.	23 8 -	60 - -	
			55 8 -	140 - -	84 8 -
2d	Ditto - - -	Ditto - - -	20 - -	140 - -	120 - -
3d, 4th,	and 5th Years at the same rate as the 2d. -		60 - -	420 - -	360 - -
				Total - - -	564 8 -
		Wet Land.			
1st.	White Paddy - -	- - Ploughing Seeds, Labourer's Hire for Planting, Watering, Cutting, &c.	25 - -	90 - -	65 - -
2d	- - Ditto Small Crop of Gingily Oil Seeds.	- - Ditto - - -	25 - -	120 8 -	95 8 -
3d.	Ditto - - -	Ditto - - -	25 - -	169 - -	144 - -
4th and	5th Years at the same rate as 3d - -		50 - -	338 - -	288 - -
				Total - - -	592 8 -

Commissioner's Office,
Vizagapatam, 9 July 1855.

(signed) *J. Goldingham*,
Commissioner.

No 13.—COMPARATIVE STATEMENT of Expenses and Returns from a Pootty of Irrigated and Unirrigated Land of the First Sort.

YEARS.	Unirrigated Land				The Same Land when Irrigated.				Comparison of Columns 4 & 8.	
	Potties of Grain on a Pootty of Land. 1.	Value. 2.	Deduct Costs of Production 3.	Remain or Profit 4	Produce of White Paddy per Pootty 5.	Value at Nine Rupees. 6.	Deduct Cost of Production. 7.	Remainder or Profit 8.	Increase. 9.	Decrease. 10.
	C. Rs.	C. Rs	C Rs.	C. Rs	C. Rs.	C Rs.	C. Rs	C Rs.	C. Rs.	C. Rs.
9 - - - - -	10	80	44	36	8	72	44	28	-	8
2 - - - - -	12	110	7	103	10	90	30	60	-	47
3 - - - - -	12	110	7	103	16	144	30	114	11	-
4 - - - - -	10	90	10	80	20	180	30	150	70	-
5 - - - - -	8	72	10	62	20	180	30	150	88	-
								Total - - -	169	55

Commissioner's Office,
Vizagapatam, 9 July 1855.

(signed) *J. Goldingham*,
Commissioner.

From Colonel *A. Cotton*, Commandant of Engineers, to *H. Forbes*, Esq., Secretary to Government.

Sir,

HAVING been so much concerned in the Godavery Delta Works, I trust I shall be held excused in offering to Government a paper of remarks on the report of J. Goldingham, Esq., on their effects, dated 9 July 1855.

In these remarks, I have thought it right to give my opinion distinctly. If it should be thought that they might have been written in less decided terms without compromising truth, I must apologise by saying that I consider the question of the results of this great experiment, of such paramount importance that it was absolutely necessary that I should put in as clear a light as I could, what I feel fully assured are the fallacies of the paper I have examined.

I must also beg to notice that the style of the report is that of papers generally, belonging to an old and deeply rooted system, so destructive, according to my views, that till it is fully exposed and rooted out, India cannot flourish.

Till reports are based upon *bonâ fide* returns, and till they contain *bonâ fide* European conclusions drawn from such real returns, I am persuaded that India must continue to be the impoverished and degraded country it is, and our power as baseless as late events have shown it.

I must also beg to plead, that after what we have seen now, at least, no public servant would be at all excusable who did not speak most distinctly on what he considered destructive fallacies in a question, about which he had greater means of forming a judgment than any other person so far as actual experience can go.

My position is this, that this is not a minor nor even a secondary question, this question whether water, water for irrigation, and water for navigation is, or is not the grand means for the material improvement of India, and whether railways or any other means are superior or comparable to it, but that it is really a vital and fundamental question in the future management of the country.

In my comparison of land and water carriage, I have omitted to mention that the results of the Bombay Railway are the same as those of Madras, that is, that it has not produced any good effect upon the traffic of the country. Captain Rivers, the consulting engineer, states, according to the newspapers, "as the results of the year's experience, that the railway only conveys an insignificant portion of the" (old) "traffic that goes on between the stations of Wasind, Campoolie and Bombay, that the railway is an expensive machine both in cost and keeping, doing no work while there is plenty for it to do," just as on the Madras line. It seems from the Bombay chief engineer's address at the Bombay Mechanics' Institution, to convey about 35,000 tons a year on an average of its whole length, a quantity, as Captain Rivers says, quite insignificant, and that at a price only just low enough to keep it on the railway, so that there is no benefit at all to the public worth mentioning, even on the trifle that is carried, whereas, had the water communication been completed from Bombay to Campoolie, at the foot of the ghauts, by a steam boat canal of 24 miles, at a cost of about 5 lacs, instead of 60 or 70 lacs, the cost of the railway, the distance would have been 44 miles instead of 70, the time for first-class passengers, three hours instead of four, the cost of carriage, both of goods and passengers, about 1-16th of what it is by the rail; instead of only a small portion of the old traffic being carried along it, a new and enormous traffic would have been created, probably at least 10 lacs a year would have been saved in interest, and cost of transit to the community of Bombay, and a powerful stimulus given to the interior of the country; whereas now, as in Madras, this line is probably sealed up for ever from all the benefits of cheap transit. No management of the railway can make any material difference, the evil is radical, the bare cost of carriage over 70 miles of railway, must be 10 times that over 44 miles of water, and the extra capital of about 60 lacs is sunk, and can never be recovered. These actual effects of land carriage in two different localities, compared with water carriage, are of the utmost importance. Think of the number of first class passengers, the only kind of traffic for which all this enormous expense has been incurred, being from 1½ to 2 per train, from 3 to 4 per day on both these railways, and that not the average of the whole intended line, but only on that part of it immediately adjoining the city, which is in all respects the capital of the Presidency.

I cannot transmit this paper on the Godavery Delta Works, without expressing my exceeding satisfaction at the vigour and thorough efficiency with which the works have been carried on during the last three years. Had the Government allowed 3 lacs a year for this undertaking, I should have been highly pleased, but 6 or 7 lacs a year has been allowed, and according to my opinion, expended in so thoroughly satisfactory a manner, that there is now a completeness and efficiency in the works far beyond what I had contemplated.

Thus we have this great satisfaction that the foundation is sound, and the evil which exists can be remedied, that is, the non-collection of the water-tax. A very moderate tax on all the lands watered and otherwise improved, will make the increase of revenue 30 lacs or 150 per cent. upon the old revenue, and 100 per cent upon the outlay, instead of as at present 40 per cent. and 25 per cent. respectively, and this increase of revenue would have spoken intelligibly to those who have not time or capacity to look more closely into the matter. Such a palpable proof of the effects of such a system of works is probably necessary to ensure their extension to all the other districts of India.

I have, &c.
(signed) *A. Cotton*, Colonel,
Commandant of Engineers.

Madras, 19 September 1857.

MEMORANDUM on Mr. *Goldingham's* Report on *Rajahmundry*

9 July 1855.

1. AMONG various papers connected with this subject, I select this one, not only as being the one of highest authority, but also, as it seems to me to offer the best ground for giving my opinion on the leading points in this question.

2. I must premise that I look upon this as nothing less than the great question, whether an extensive system of irrigation and navigation is really calculated to produce the results which their advocates have expected from them, and therefore, whether it is expedient to extend them throughout India. That great efforts should be made to get rid of the results they may have produced, is of course to be expected, for all who have held adverse opinions, or who have been opposed to anything that has the nature of an innovation, must be under a strong bias to underrate results, which seem to show they were mistaken, and even many who have not opposed, may be led to take a false view either from the influence of others, or from other causes. And it is a fact, and one indeed which need not surprise us, that almost every individual of the native revenue servants, whether of this district or others, have been throughout entirely opposed to those works, and hence every opinion and every return offered by them, required careful examination. In this way, however, the grand point is gained of earnest discussion being brought to bear upon the subject, and thus the truth is put in a strong light, for nobody is fully satisfied of anything, or ought to be, till he has heard what an opponent has to say.

3. The Commissioner wrote this report under instructions, "to ascertain accurately what the effects of this great work are." In paras. 6 and 7, is given the extent of land occupied and unoccupied in the Rajahmundry Delta, the former 275,000 acres, the latter 53,000. This at once brings us to one of the great points of this paper. Are the returns contained in it correct in the main, or not? I am not now speaking of their precise accuracy, but of their correctness. That is, the question should be answered,—Are the statements which have been furnished to the Commissioner, such that they are in the strict sense of the word true, or such as are false returns? Is their incorrectness so entirely wide of the truth, as to falsify entirely all the deductions drawn from them? It will be seen as we proceed, that not only this, but almost all the other main statements, referred to in the report, are, without using any improperly strong language,

false statements, that is, that they are so far from the truth as entirely to falsify all conclusions drawn from them To call them therefore by any other term than false, would of course, convey a false impression

It must not be imagined that I intend in the least to imply that the Commissioner intended to send up returns which were false No doubt he received them as true, and according to that unhappy custom which has been adopted to such a ruinous extent in the public business of India, accepted them without the least investigation, or even a moment's consideration, taking it for granted, that because the return was put before him in the proper form and by the proper authority, that therefore its correctness was unquestionable, and there was no possibility of its having been prepared either by those who were incapable of doing it properly, or too careless to ascertain its correctness, or under a strong bias to falsify it. In the case of this first return of 325,000 acres of cultivable area in the Godavery Delta and Rajahmundry district, it is contradicted by a mere reference to the map The portion of the Delta within the Rajahmundry district is not less than 2,000 square miles, which, allowing 500 acres per square mile, that is deducting about 1-4th for rivers, roads, &c., gives 1,000,000 acres for the arable area. There can be no room for mistake as to this calculation being in the main correct What the above area of 325,000 acres, or 650 square miles is, I really have no idea It would make out that the arable portion of the Delta is not much more than 1-4th of the whole, which any person knows is out of the question.

4 Again, in para. 15, he refers to Appendix 2, for a statement of land and revenue In Rajahmundry, the former is stated to be 57,000 acres under the annicut irrigation. This, again, has nothing whatever to do with the fact

5 The precise quantity that received water from the annicut in 1854-55, I have no means of ascertaining, but it could not have been less than 200,000 or 300,000 acres The district engineer has abundant means of knowing what area the water reaches, within limits sufficient for our present purpose This, therefore, also is a false return, it is not an approximation to the fact. Mr Commissioner could have taken no measures to ascertain the real state of the case, but must have taken any statements put before him. I feel sure that he could not have tested a single talook or village, and it is certain he did not even call upon the engineer for the statements of the land watered. Everybody knows what sort of returns the people who are to be assessed will make of their own lands. But nobody but those who are thoroughly acquainted with these matters, could believe the impudence with which such false returns are sent in, where the people hope that there will be no real inquiry. I was told by the Collector of one village, every acre of which was ascertained by the engineers to be irrigated, which had been returned as totally unaffected by the annicut, and of others that had four times the extent of irrigation that was stated in the returns, and it is certain that hundreds of villages that were irrigated, were returned as receiving no water. One day I met a revenue officer at his tents just as he had finished his jummabundy, and he told me that there was no land whatever under summer crop in that talook; I was not three miles from his tents, when I passed through a large extent, perhaps 200 or 300 acres, at that moment under crop, belonging to that talook

6. If it were only on this one point, I am sure the report is worthless, for it gives a completely false view of the case Had the engineer been called upon to send in a map showing the lands that the annicut water had reached, and to test a few of the villages for comparison with these returns, and had the Commissioner or his assistant gone with the engineer, and the talook and village authorities, to see for himself the state of the case, he would have easily found out that these returns were totally false. To illustrate this point, I append two letters between the Commissioner and the district engineer, written about a year after this report was made. In consequence of the Government forwarding to the Commissioner extracts from the engineer's reports, which gave very different areas from some that the Commissioner's report contained, the latter called for the engineer's authority for his returns It will be seen that the engineer there gives the example of two villages which he examined, and found entirely watered, while the returns gave only about 1-4th of the area as watered, and as the pooty,

which is commonly called eight acres, really contains about 10, the actual number of acres watered was fully five times that entered in the returns.

7. In para. 20, the expression "Normal standard" is used, and the revenue of land in the highest known year is taken for it. There is no such a thing as a normal standard in the district. When the district was in confusion, there was one state of things; when it had peace, and was a manufacturing district, there was another; when it lost its manufactures, there was another; after 1840, when the irrigation first began to be attended to, there was another; and now there is another. A normal state of revenue is an imagination.

8 In the 21st para, the Revenue after the annicut, is compared with the average of five years before it. There are three fallacies in this comparison :

1st. The improvements did not commence with the annicut The clearing of channels, the embanking of the rivers, &c, were carried on in 1845, 1846, and 1847. Thus the improvement on the revenue which was the effect of the works, is brought to tell against them. But more than this, the revenue of one talook, Oondee, had been greatly affected by attention to irrigation commencing in 1840.*

2d The average increase from the time the works are commenced, shows nothing. The question is, what the last year's revenue is, or the average of the last two years, because part of the outlay had not taken place in the first years that are brought into the average.

3d. This return is totally fallacious, because on 9-10ths of the lands no revenue had been levied for the annicut water.

9 In the paras. that follow, the effects of the new works are stated, in which he comes to the conclusion, that the annual increase of revenue is, 1,30,000 rupees (para. 29).

10. In the first place, who could imagine that there was one fact in this case not in the remotest way alluded to, which is no less than this, that the revenue authorities had not levied the tax for the water on the lands irrigated, except for an insignificant extent It will be observed, that the Commissioner nowhere in this report states, that water-tax had been levied on all the lands which had received water Thus, in his statement No. 2, he gives the average collections on his area of 57.000 acres irrigated from the annicut, at 3¾ rupees per acre. The least consideration of this fact would have convinced him that no water-tax, or something merely nominal, had been levied on that nominal area. He gives, in the same statement, No 2, the average collections on unirrigated land 3¼ rupees per acre, leaving a difference of only ½ rupee per acre for all the benefit of irrigation, navigation, river embankments, and drainage, being an increase of 1-6th upon the dry revenue

Had he compared this with the progress of the village of Bickavole, as given in another para. in this report (the average revenue of ten years preceding the outlay of the Samalcottah Channel was 2,900 rupees, that of the last year the Commissioner gives was 9,657, or much more than threefold), he would have seen at once that the water-tax had not been levied on almost the whole of the lands he states to be watered

11. At first, a few villages were made to pay additional assessment, but as soon as it was found that these were adduced as proofs of the good effects of the works, the levying of the water rates, except what was merely nominal, and that only on a very small portion of the lands, was stopped, and it is only now under the positive orders of Government that a water rate is being levied, and still only on the nominal extent of land that has had water three years. Taking the actual quantity of land watered, at only 250,000 acres at that time, the revenue, at the present very low water rate of 2 rupees per acre, would have been 5 lacs for only one crop, besides new cultivation.

---

* This was not the effect of these particular works, but it was an effect of improved irrigation.

12 The positive neglect of the Revenue authorities to levy the additional tax is the most important fact in the whole case, as respects the Revenue, and these returns are so given as to lead any one to suppose that the land had been taxed as fast as it was benefited

13 But it was not only the land that was watered that was benefited All the low lands of the Delta had been also improved The evil they suffered under was excess of water, and the river embankments which were begun in 1845, besides other works, had almost put an end to destructive floods Nothing had been levied from such lands. Again, a very large proportion of the Delta had some benefit from the water carriage, whether the lands were watered or not, and all had the benefit of the expenditure.

14 The work cannot produce revenue if the revenue authorities will not collect it. Some of the lands now in the eleventh year of irrigation, are paying this year the first water-tax.

15 In fact, the state of things here throws a light upon the strange anomaly in the north-west, of a body of engineers being employed to collect the revenue on the lands that they had themselves irrigated From what has taken place here, I have no doubt that this arose from their finding that the revenue officers would not do it, and the engineers, consequently, as the only alternative urged the Government to let them collect it themselves

16 Of other mistakes, fallacies, &c, in these paras, I must notice the following.—

17 In para 25, it is stated, that the Toolea Bagah had been more or less available for irrigation since 1847-48, the fact being that there had always been irrigation under it, that it was in a most neglected state, that its improvement was commenced in 1846, and materially affected the cultivation that year

18. In para 26, reference is made to an Appendix supposed to show the increase under the Toolea Bagah (I suppose including the branch called the Samulcottah Channel), from the time when water was first received This return also is totally false The average of five years is given as before the irrigation commenced, and this ends with 1847-48, whereas the irrigation commenced in 1846-47, and thus two years which had the water from the new Samulcottah Channel, and the improvement of the Toolea Bagah main channel are given as years before the works, and thus made to tell against them The fallacy consists, as before, in the use of the word annicut, whereas these channels were cut and improved two years before the annicut was begun Thus, in another statement, No. 4, the Revenue of the village of Bickavole is given as 5,829 rupees in fusly 1857, and thus is made part of the average before the works The actual average of Bickavole for ten years before the works was 2,900, and in 1847-48 nearly 3,000 rupees had been added, in consequence of the supply of water from the Godavery which it had never had before

19 By the return given, the results in Bickavole were as follows —

Collections in 1253	1843-44	3,622
"	1844-45	3,897
"	1845-46	2,922
"	1846-47	4,248
"	1847-48	5,824
Average before the Works		4,102
	1848-49	7,367
	1849-50	8,504
	1850-51	9,148
	1851-52	9,248
	1852-53	9,657
Average since the Works		8,785
Difference		4,683

The true statement would be .—

		Increase of each year above former Average.
1843-44 - - - - - - -	3,622	
1844-45 - - - - - - -	3,897	
1845-46 - - - - - - -	2,922	
	3) 10,451	
Average before the Works - -	3,487	
1846-47 - - - - - - -	4,248	761
1847-48 - - - - - - -	5,824	2,337
1848-49 - - - - - - -	7,367	3,880
1849-50 - - - - - - -	8,504	5,017
1850-51 - - - - - - -	9,148	5,661
1851-52 - - - - - - -	9,248	5,761
1852-53 - - - - - - -	9,657	6,170
1853-54 - - - - - - -	9,693	6,206
1854-55 - - - - - - -	9,819	6,322
1855-56 - - - - - - -	10,803	6,596
1856-57 - - - - - - -	10,900	7,423

20. Thus the actual increase in 1853 was 6,170, on 3,437, or 170 per cent.; not 4,683 upon 4,102, or 112 per cent.; and it is, now that the water rate has been laid upon the enam lands, 7,423 rupees, so that the village pays three times the average of the three years preceding the works. It is quite fallacious to give the average since the works began, because in the first year the whole expenditure had not been made. As this fallacy is not confined to the report under consideration, and it is a very important one, I give here the calculated results of a work by the two modes of showing them. Let us suppose 10,000 rupees laid out every year, and that the revenue improves in consequence at the rate of 5,000 rupees a year, the calculation from the average would be as follows:—

——	Expenditure.	Increase.
1st year - - - - - -	10,000	5,000
2nd year - - - - - -	10,000	10,000
3rd year - - - - - -	10,000	15,000
4th year - - - - - -	10,000	20,000
5th year - - - - - -	10,000	25,000
TOTAL Expenditure - -	50,000	5) 75,000
	Average - -	15,000

21. The average revenue would then be stated at 15,000 rupees per annum, on an expenditure of 50,000 rupees, or 33 per cent, whereas it is evident that the increase on 50,000 has been 25,000, or 50 per cent. The fallacy consists in taking into the average, years that occurred before a great part of the expenditure was made. Even the 50 per cent. return is of course much under the mark, because no expenditure produces its full results under several years.

22. Under para. 26, he goes on to show the increase in 45 villages, that had the water from one to six years. The increase of revenue in 1263, was 62 per cent. above the average of five years before the works. How remarkable it is that he should not have observed the enormous discrepancy between the increase in Bickavole and in these villages, and have ascertained what the cause of it was.

23. The cause was what I have stated, viz, that in most of those villages the additional revenue had not been levied: either nothing at all had been taken, or a merely nominal sum.

24. Bickavole was before the best watered village in these talooks, the only one that had two large tanks, and the increase which it has borne very well shows what might have been obtained. I don't mean to say that I think so heavy an additional assessment ought to have been levied, but it shows indis-

putably what the improved irrigation will bear in increased revenue, and it shows what enormous sums have been lost to Government by the neglect of the revenue authorities to impose some additional payment as soon as ever the water reached the upper lands, and as soon as the flooding of the lower lands was diminished

25. In para. 28 it is stated that the irrigation was confined to the Toolea Bagah till 1853-54. This also is not the fact. The annicut was carried across the river in 1850, and that year water was thrown into the Weyairoo in the Western Delta. The delay of realisation of revenue was not caused by want of water, but because the rights of Government were neglected.

26. In para. 31 he gives a statement of the total returns from the annicut works It will be seen from my previous paras. that I consider this return of no value whatever, independent of the essential fact, that the additional revenue had not been levied excepting on a very small portion of the lands. To give this statement as a correct return of results, without hinting at this astonishing fact, must totally falsify the whole case.

27. The real extent of land watered, having been at least 2½ lacs of acres, even if the low rate of two rupees for one crop which is now being levied from some of the lands, had been taken, the direct increase from old lands would have been five lacs a year, besides extended cultivation, extra revenue, &c

28 In the 34th para. the improvement of the condition of the people is spoken of as "an important benefit"

29 I must beg to call this the grand object of the works. Of course the finances must be looked to, and it must be ascertained that works will pay in revenue the interest of their cost, but the benefit of the mass of the population is the real object. And on this point nothing can be more satisfactory than the results of all the inquiries that I have made. The receipts of the labouring classes are about 50 per cent. higher than they were, and there is employment for all, and the land owners are undoubtedly completely relieved from the wretched state of poverty and debt they were in.

30. In paras. 36 and 37 Mr. Commissioner endeavours to show that Mr. Taylor's information as to increase of revenue is fallacious

First, he compares the revenue of the previous years with a certain sum which he is pleased to call the normal standard, and which he himself elsewhere states to be the highest known. First, there is no such a thing as a normal state of things, as I have before stated, and in the next place, that the revenue and the district were in such a miserable state for a series, as here given, of six years, was one great reason why the works were required and undertaken, but certainly nothing could be more fair than to compare the revenue since with the revenue immediately before. The question is not between the revenue now collected and that collected many years ago, when the district was enriched by a large export of manufactured goods, but between the present revenue and that of a series of years immediately preceding the new works. In para. 41 is a statement which, if it proves anything, proves that irrigation, drainage, &c, are a positive injury to a district. It represents that the increase of revenue in the upper talooks of the Collector's charge have yielded an increase of revenue of 90 per cent, while the lands under the new works have only yielded an increase of 67 per cent. The Commissioner does not himself attempt to give any explanation of this, but he states that the revenue in the dry talooks, quoting Mr. Taylor, is owing to—1st, a change from Zemindary to Government management; 2d, to protection of life and property; 3d, to the expenditure of the sugar manufactory, 4th, to a succession of propitious seasons. But then, he adds, that there is a falling off of 72 per cent. in the Sub-Collector's dry talooks, owing to the vicissitudes of seasons. This leaves us no other conclusion than that there were propitious seasons on one side of the river, and bad ones on the other. The fact is that this absurd return shows nothing. It is a comparison of one year, which in dry talooks might have been of course either half or double the average, with the average of the five following years. Such a return is altogether fallacious, and no wonder that it flatly contradicts itself, the increase in the one tract being 90 per cent., and the falling off in the other similar tract 72 But the return in another point of view is highly important, as showing in a strong light what the objects were of those who prepared these returns. All such returns as seem to prove too much of course confute themselves, because every body knows that when a return seems to show that a district had better not be watered, it contains a fallacy. And, lastly, it would be useless to compare the increase of the upper talooks with that of the Delta, for the reason already assigned, viz., that the water tax had not been collected in the latter. The fact is that in a very short time, and in spite of the way in which the claims of Government were trifled with, in letting most of the lands have all the benefits of the works without paying any thing, the revenue of the district has been brought up to much above what it was 20 or 30 years before, when the district was comparatively wealthy in consequence of its great manufactures and consequent foreign trade.

31. In para. 44 he states that the average of the collections in the upper talooks, for two series of six years, is 1,81,000 and 2,27,000, showing an increase of 46,000 rupees, or 26 per cent., whereas we find in the village of Bickavole the increase had been 200 per cent, and something like this ought to have been the case with all the villages to which the water was conveyed.

10 acres.

32 In para. 45, the estimated returns from a pooty of irrigated land, compared with those from land in the former state, are adverted to. A single estimate of this sort, prepared by interested persons, is of course not to be relied on. And the most casual inspection of the estimates shows that they are simply ridiculous. The first two statements make out that the produce of irrigated land is little more than that of dry land, the latter being 140 rupees, and the former 169 rupees. What can be the use of putting forth statements of this sort, that everybody knows to be altogether contrary to fact. The second statement makes out that there is in the first two years an actual loss on the irrigated land compared with the unirrigated.

33. I cannot here help remarking on the extraordinary circumstance, that there is nothing in this report that implies that any attempt was made to ascertain this essential point. Surely when "the wish of the Government was that the effects of this great work should be accurately ascertained," the most important inquiry of all was, "what is the value of produce of the irrigated lands, compared with what it was before?" How could any conclusions, worth anything, be arrived at, unless this fundamental point was actually ascertained. All that is said on this point is, that an estimate given by Mr. Taylor is referred to.

34 It appears that not the slightest inquiry was made on this head, much less was any personal examination made, to assure the Commissioner that he was proceeding on correct information. This seems to me an extraordinary circumstance Afterwards, in para. 51, the rate of 1¼ rupees per acre is proposed as the highest which it would be safe to impose for the new works, but not one word is said as to the grounds on which this is fixed upon. If there were any grounds for it, surely they ought to have been stated, especially when nobody ever heard of such a rate in any other district.

35. But let us compare this estimate with fact. In the estimate the value of produce in the first year is given at 72 rupees a pooty, or 7¼ rupees an acre, the actual value of produce of one crop on two pieces of land cultivated by a gentleman for trial were respectively 14 rupees and 30½ rupees in the first year. The produce of another piece of land by another person was 28 rupees, in the second or third year. In the estimate 18 rupees is given as the highest produce on first-class land after three years of cultivation for paddy.

Again, Mr. Newill took the produce by actual measurement of many fields in the Kistnah Delta, and found it, on an average, where there was good irrigation, 1½ Guntoor Pooties of 1,920 lbs, which, at the average price of the last five years, 28 rupees, give 42 rupees, besides straw, for which add 1-8th, making 47 rupees an acre, for a single crop. Again, if the value of the produce of an acre of irrigated land of the first class is 18 rupees, how is the land tax of 12 and even 20 rupees paid in some districts. I have a statement of the produce, &c., of an acre of land in Bellary, for instance, just received, on which the tax is 18 rupees an acre. But every body knows these things, and that a statement which shows that an acre of first-class Delta land under the most perfect irrigation with rich river water yields 18 rupees a year in gross produce, is on the very face of it false.

36. In the estimate it is then made out that there is a profit the first year on the irrigated land of the first class of 2⅓ rupees per acre, but on the two pieces of cultivation first mentioned here, the actual profit was 6 rupees an acre on the poorest land, and 18½ rupees on the best piece on a single crop, in the first year. Another farm of which I got the particulars, yielded 32 rupees per acre.

37. These are all actual ascertained returns, and if Mr. Commissioner had himself seen some grain cut and weighed, he would have ascertained at once the value of this estimate.

38 The fact is that the utmost care should have been taken to ascertain the real state of this case, for no conclusions of any kind worth anything could be reached without it. The second statement, No. 13, gives the value of produce on unirrigated land at about 9 rupees an acre, and I believe this is not far wrong. If we take the value under irrigation at only 25, the difference, 16 rupees, on 2½ lacs of acres, the lowest area watered at that time, the increase of produce will be 40 lacs, out of which the additional revenue collected was, according to this report, 1,30,000 rupees, and this does not allow for new cultivation, for the reduction of floods, and for the water carriage.

39. In para 48 it is stated that the cost of transit has been diminished 2-3ds. This also conveys a very incorrect view of the effect of water-carriage

1st For a part of the year and over much of the Delta, things could not be carried at all, except at a ruinous price, so that rice might be in great demand at Cocanada, and a man could not sell what he had, from the impossibility of conveying it.

2d. The actual reduction is not 2-3ds, but 8-10ths or 9-10ths The usual price paid for stone is 3 pie a ton a mile, about 1-10th of the former price.

3d. This is the charge, but it is a charge that allows an enormous profit to the boat owner, because the supply of boats does not equal the demand, and in judging of the results of the works, our question is, what is the total saving in carriage, whatever proportion of it goes to the employer, and what to the boat owner? The actual saving, I believe, is at least 19-20ths

40. In the 51st para he states, that the Delta land will not all be watered from the channels, but that the water must be raised by picottahs He says, "there are no data for ascertaining the extent of such land, but it is supposed to be considerable "

41. This is an extraordinary passage. Might we not ask who it was that supposed this to be considerable? Truly we do not want anonymous suppositions on important points in this investigation. I need hardly say that all this is pure imagination. There is no such land in the Delta. But what can be the meaning of giving suppositions when the engineer could have furnished him with real information on the point? Every acre of the Delta, with the exception of an insignificant strip near the annicut, will be watered direct from the channels. How strange it seems that an officer inquiring on the spot should offer to Government such a supposition as this, when the fact could have been ascertained without the least trouble.

42. In paras 51, 52, 53, 54, he proposes a rate of 1¼ rupees for the water, but throughout the whole of them not a word is said as to the grounds on which he fixes this rate He says, for instance, a "higher standard cannot be safely taken in the existing state of things in the Delta," and so on, but nothing tangible is said about it, and the Government is left to guess at the grounds on which this sum is fixed. I have abundance of data to prove, that the increase of produce on one crop land is from 20 to 30 rupees, and two crops 35 or more, that the carriage of the produce of an acre or a ton of paddy to the port, suppose 40 miles, is 4 rupees less than it would be by land, and that besides this there is the advantage of being able to send the produce to market at any moment.

43. Considering these things, and the rates on irrigated lands in all other districts, I can find no ground whatever for this water rate of 1¼ rupee for land placed under circumstances incomparably more advantageous than that of any other district at Present It is quite certain that it could pay a higher rent than any other land in this Presidency.

To put this proposed water rate of 1¼ rupees in a clear light, I give here the actual assessment on irrigated land in various districts:—

	Rs.
Two-crop land under the Darojee Tank in Bellary, without water carriage, and 300 miles from a port - - -	18
Trichinopoly channels from the Upper Colloroon Annicut, as given in the Public Works' Report, without water carriage, and 100 miles from a port, no summer water -	8
Under the Calingaroyen Channel in Coimbatore, two crops, without carriage, and 200 miles from a port - - -	11½
Under the lower annicut in South Arcot, with partial water-carriage, and 30 miles from a minor port - - -	7½
Average of Tanjore, chiefly one-crop land, no summer water, the water supply always imperfect, no water carriage, 10 to 60 miles from a port, almost half the land of exceedingly poor quality - - - - - - -	5

The Commissioner's proposed rate for the Rajahmundry Delta, with scarcely any poor land in it, with water carriage to every village, with a far more perfect system of river irrigation and drainage than any other district, with water throughout the year, and with the only safe port in the Presidency :—

	Rs.	
Average tax on unirrigated land as given in statement No. 2 - - - - - -	3¼	
Add water rate - - - - - -	1¼	
		4½
Rent volunteered and paid for ordinary land in Nunggarum Talook of Rajahmundry to a European renter, without any Government and permanent title, for one crop -		11¼

It is well known that the assessment in Tanjore is so low that the land is saleable at 50 or 60 rupees per acre on an average. Thus the rate proposed for a Delta composed of the richest land, with advantages much beyond that of any other tract of land in the Presidency, is below that of the lowest assessed land in any other district, and less than half the rate at which natives have come forward, and asked to sub-rent land in this very Delta of ordinary quality, and without any particular advantages whatever, for one crop only, and without any right in the land, whereas it is capable of paying a higher assessment than any other land in the Presidency. The rent now paid by the sub-renters alluded to in Nuggarum for one crop is 8 rupees above the old rate of 3¼ rupees, or more than six times the water tax that the Commissioner proposes.

44. In para. 58 he adverts to the failure of the expectation respecting the sugar culture. There has been no important extension yet, and from my inquiries the reason is plain enough, viz., that it was more profitable to employ the same amount of labour in cultivating rice. There are, however, now indications of an extension. One European gentleman has planted this year 80 acres, and he is planting 200 or 300 acres more this year, purposing to extend it to 600, and another gentleman is planting 20 or 30 acres, and the results of a few acres planted by the latter last year were abundantly profitable. Nothing can be finer than the canes planted this year by Europeans, and the statements they give me of the cost and return obtained and expected, are extraordinarily encouraging. There is thus every reason to believe that the attention of European capitalists will be drawn to the district for this cultivation.

45. It must, however, be observed, that the present population is not equal to the full cultivation of the Delta, even for paddy.

46. In para. 59 it is stated that in the Woondy Talook and under the Samulcottah Channel, the great results must not be viewed as furnishing a standard for the Delta generally. This is quite true, for Woondy had already extensive irrigation, and was far better watered than any other part of the Delta, and one of the villages under the Samalcottah Channel was better supplied with water than almost any one in the Delta. The effect of the irrigation in the Rallee Talook, for instance, which had not one acre watered before, must render it capable of bearing a far greater increase of revenue than Woondy, and so also, though in a less degree, with all the other talooks. I must further notice the extraordinary remarks in the latter part of this 59th para. The Commissioner says, “Viewed broadly, the Delta may be said to be nearly fully occupied, having an assessment which approaches a maximum standard; the main functions of the annicut in this case will be to give permanency to a fluctuating revenue, and the effect will not be so striking as in the other cases cited” (the cases of the Woondy Talook and the Samalcottah Channel lands). My exception to this is, that it is a statement diametrically opposed to the true state of the case. In the first place, the Godavery Delta is so far from being fully occupied, that it contains only about three-quarters of a million of people, while that of the Cauvery, of the same extent, but of much inferior land, contains nearly or quite 2,000,000. With its very superior advantages, both in land and water, the Godavery Delta will hold 3,000,000, or four times its present population. Again, what can be meant by saying that an average tax of 3¼ per acre for irrigated land of the highest order, one half or one-sixth of that in other districts approaches a maximum standard. The revenue of the Delta of the Cauvery, with its very light assessment, is much more than 60 lacs; that of the Godavery is under 30, with its vast superiority, both natural and artificial. Thus the “main function”

tion" of the annicut is to give permanence to an assessment of 3¼ rupees per acre on the land previously in cultivation; watered throughout the year, secured from river floods, and those of the local rains, pervaded constantly by a system of water carriage, this Delta is only to pay just what it did before; the "main function of the annicut is to give permanence to a fluctuating revenue." I only ask, is this a true representation of the case, or is it not? What a remarkable comment upon this extraordinary statement the present statistical return of the district affords. We there find that, in spite of the ridiculously low rate of water tax that has been levied, in spite of 4-5ths of the land not having yet paid a rupee, the actual land revenue is no less than 40 per cent above that of the former average, and that paid with such ease, that while the former outstanding balances used to be 2½ lacs, they are now 30,000. I must beg that this statement of the Commissioner may be thoroughly considered: it affords a clue to the whole report. What must have been the strength of that bias which could have induced an old experienced revenue officer to commit himself to an opinion that the utmost that could be done to improve Delta lands, in the way of irrigation, navigation, and drainage, could only enable the lands to pay 3¼ rupees an acre, and that only on a part of them, a large portion being left as not worth cultivation; this in face of facts, of which no man in Madras was more conversant than the Commissioner himself. We cannot possibly be misled in arguing thus, if the Delta of the Cauvery, with its inferior land, its extraordinary light assessment, its imperfect supply of water even in the monsoon, its total want of summer water, its land carriage at 2½ annas (3¾ *d.*) a ton a mile, and without a safe port, can pay much more than 60 lacs a year, and yet sell its lands at 50 or 60 rupees an acre, the Delta of the Godavery of the same extent, with its very superior land, its full supply of water for eight months, a large supply for the remaining four, its water carriage at 1 to 2 pies (⅛th to ¼ penny) per ton throughout the year, its safe harbour, and its complete drainage, could, when filled up in population, pay 100 lacs, or about five times what it has paid without artificial advantages.

At this present moment about 700,000 acres are watered, and the other 500,000 have the benefit of the drainage and water carriage A water-rate of 5 rupees, making the assessment 8¼ rupees, which certainly would not be 25 per cent. upon the produce, would make an addition of 35 lacs on the lands before cultivated alone, without allowing for new cultivation, for the land not yet watered, though benefited in other respects, and for increase of extra Revenue.

The Commissioner gives, in this para. from Mr. Taylor, a return of waste land of 27,000 acres in the Sub-Collectorate. What this means I don't know; but it certainly bears no proportion to the extent of land that does not pay revenue

47. With respect to the future price of grain, it must be remembered that the moment cheap access is given to a port, the price, except in scarcities, does not depend upon the extent of the crop, but on the state of the market of the world. While rice is at a certain price in London, it cannot possibly fall below a corresponding price in Rajahmundry. In seasons of scarcity in the neighbouring districts, it may rise extraordinarily high, but it cannot possibly fall excessively low

48. On the 60th and following paras., about the modes of assessing the land, I have of course nothing to say, except that I do hope there will be no more guessing, and that nothing will be done, upon such returns and statements as this report contains, but that the actual extent of land and actual produce will be really ascertained, and the water taxed upon real grounds. And especially that the tax in other districts may be considered. It is unjust to make the cultivators of one district pay a rate very much higher than those of another. It must be remembered that a greatly lower assessment cannot be levied on the 2,000,000 acres of the Godavery and Kistnah Deltas, without injuriously affecting the cultivators of other districts, already much more highly assessed. And further, I must beg to offer my opinion, that a very low assessment is decidedly objectionable on general principles. Such intolerable injustice and mischief has been done, by an excessively high assessment in particular tracts in times past, that we are now in danger of thinking we cannot have too low a tax. But even in England it is found that too low rents inevitably lead to idleness and slovenliness in the tenants; and in this country I am sure there is a very wholesome stimulus in a moderate assessment, and that there is real danger of

the people sinking down into the state of the Pacific Islanders, and losing all activity and industry. I must also insist upon this as an important point, in which the welfare of all India is essentially concerned, viz., that the real power of irrigation and internal navigation, if shown in the most palpable manner, that is by a large increase of revenue, is a thing which will strike those who are too slow or indifferent to be aroused by any less obvious fact I must also state that I entirely agree with the Civil Engineer of the Kistnah Division and with the late Collector of Nellore, that a water-rate should be levied from the very first. I consider this of the greatest importance. It is well known, that with the great mass of men, the shortest way of convincing them of the value of a thing is to make them pay for it. So stupid are the people generally in those districts, that in consequence of the Government, or rather the Collectors, letting them have the water for nothing, they actually think they are doing the Government a favour to use it; whereas if they were assured that they should not have a drop till they paid for it, they would at once feel that it was of value. Further, the Collector of Rajahmundry told me that his great difficulty in levying the insignificant water-tax taken this year, arose from the fact that they had been allowed to use the water for years (some of them for 10 years) for nothing. On all accounts, therefore, as a matter of great importance to the finances, of great importance to the people of those districts, of great importance to the neighbouring districts, and of the greatest importance to the people of all India, I would earnestly urge that every acre watered should be made to pay from the very first, and that the tax should not be excessively low.

49. In the 70th he speaks of the pooty as averaging eight acres. This is a mistake; by some surveys made by the engineers, the actual area of the pooty is on an average about 10 acres. How extraordinary it seems, that in all those points, Mr. Commissioner should have neglected to seek information from the department which alone could supply him with it correctly. In the same para. he says of the present tax in the villages, under the Toolea Bagah, "it is supposed that it is equal to one-half of the gross produce, or perhaps above it." I must beg earnestly to press upon the notice of the Government again this extraordinary passage. He says again, "it is supposed." Now I cannot but ask, are we to proceed upon suppositions, and those such that it is not considered right to make any individual responsible for them. Who could suppose such a thing? The thing is so notoriously contrary to fact, that I cannot myself think who it was who supposed it. We have two proofs that Mr Commissioner himself did not suppose it; 1st, because he does not say he supposes it, and, 2dly, because he, in this report, gives Mr. Taylor's estimate of produce, without making any objection to it. In that estimate the produce of first-class land is given at 180 rupees a pooty, and in the statement the actual assessment paid on these Toolea Bagah villages is given at 45½ rupees, or about a quarter of his estimated produce on first-class land. We must make some allowance for average land; but if we allow the average produce to be 150 rupees, the proportion of tax would be less than one-third, instead of one-half, or more, even calculating from the estimate which Mr. Commissioner himself adopts.

50. But I have before shown, by stating actual results, that this estimate of produce is all nonsense.

51. The fact is this; almost the whole of this Toolea Bagah land is now regularly cultivated for two crops, and the actual value of produce must be by the various trials that have been made, at least 40 rupees per acre, not less, making the assessment of 45½ rupees a pooty or 4½ rupees an acre, 1-9th of the produce, and this I feel assured is about the real state of the case, at least the proportion is not greater than this. I have before stated that Mr. Newill's average of many actual trials in Guntoor was 2⅗ pooties of grain, which at 16 rupees gives 42 rupees and adding 1-8th for—

Value of straw for one crop - - - - -	*Rs.*	47	per acre.
By an experimental piece of ground, cultivated by a gentleman, the first year one crop - - -	„	14	„
By another piece ditto - - - -	„	30½	„
By another in the 2d and 3d year - - - -	„	28*	„
Average of T. Bagah lands according to Mr. Commissioner's statement, somebody supposes, double the assessment of 45 rupees a pooty, or 4½ per acre -	„	9	„

(Almost the whole of this land bearing at present two crops)

52. This anonymous supposition is thus shown to be baseless even by the Commissioner's own paper, and it in reality is only about one-fourth of the true *proportion of produce.*

53. But in the following page he supposes again that the produce may be 120 rupees a pooty, which differs from the estimate of Mr Taylor (which in another place he adopts), by 1-3d, or 60 rupees a pooty He then applies this to the area of land which he states to have been irrigated, viz , 46,500 acres, and shows that the actual collections were 25 per cent , or 47,000 rupees under what they should have been. Now when we compare the result arrived at by this accumulation of false returns and suppositions with the realities of the case, we find that the amount of 47,000 rupees is about the sixteenth part of what ought to have been added to the revenue

54. The actual extent of land watered was certainly not less than 250,000 acres, and the assessment at 6 rupees an acre, would have been 15 lacs. The present average assessment on this extent of land, at the rate Mr Commissioner has given, 30 rupees a pooty, or 3 rupees per acre, really would be 7½ lacs, showing a difference of 7½ lacs

55 I suppose 6 rupees on these grounds. The present average assessment is given at 30 rupees per pooty (3¾ rupees per acre, calling the pooty 8 acres), or 3 rupees the real acre The water-tax now being levied is 2 rupees for one crop land and four for two , I therefore add an average of three for water-rate, which supposes only half the lands to be double cropped. At this rate the assessment would be about 1-7th of the gross produce And it allows nothing for land cultivated with sugar, chillies, &c.

56. Surely it would have been but what was incumbent upon an officer of Government, to have ascertained by actual measurement both of produce and land what the assessment ought to be, before laying the matter before Government.

57 As the Commissioner in one part of this report refers to the increase of revenue in Guntoor before the works were begun there, as a proof that the increase of revenue in Rajahmundry would have been great without the works, I must just remark, first, that the increase of revenue in one district, which was not improved by public works, does not prove that the increase in another was not caused by its public works The increase in Guntoor was clearly caused by two things one was, it was gradually recovering from a dreadful state of depopulation, and there was nothing to prevent its rising to the state it was in before its loss of population ; the other is, that it is, I believe, now allowed by all *who have had to do with the district,* that Mr Stokes' revenue was really more than the district could bear. It is never sufficient merely to look at the collections of a district at the time If an increase is supported by an increase of exports of revenue from extra sources, of internal traffic, &c , we may know that it is a sound increase , but if not, we may be sure that it is only the fruit of more severe exaction, and will probably be followed within a few years by a falling off.

58. I must again refer to the immense importance of this subject, and it must be my apology if this paper seems to be severe upon the report under consideration In proportion to the authority of the paper, due to the experience and thoroughly approved uprightness of the writer, is the necessity of proving the essential fallacies it contains, and the total falsehood of the conclusions.

59. I think there could not be a better opportunity than this paper offers, respectfully to request the attention of Government to this very important point, viz , the nature of the statistical returns and the remarks made upon them, which in past times have been so commonly laid before Government. I look upon this paper as a lively specimen of the style of paper which has caused such incal-

---

* Since this was written, an Appendix to the Commissioner's Report, marked (A) which I had not seen before, has been put into my hands. On this I will remark more fully at the end of my present paper, but in it he gives his predecessor, Mr Commissioner Elliott's estimate of the average *of irrigated and garden land (the garden land an insignificant proportion),* at 30 rupees per acre for grain, and 1½ for straw, total 31½ rupees per acre, or 3½ times what the supposition gives as the average of the T Bagah lands. Which did the Commissioner think was the right estimate, 9 rupees or 31½ rupees? both are given in this same report, at least one in the Report and one in the Appendix (A.); they could not both be right, while the Commissioner gives them as if he agreed with both

culable mischief. A statement is called for; it is prepared by a native subordinate in some office, perhaps a man quite incompetent, perhaps personally interested in the case. The return is put into the hands of a subordinate European officer, who signs it of course, his superior does the same; it passes on through various offices, and perhaps no individual has tried it by any test whatever before it reaches Government. I state a fact when I say that this is frequently the case. I don't know how often it has occurred to me that one minute's examination of such a document regularly furnished to me from the proper office has shown that it was either false or simply nonsense, proving that nobody who had signed or countersigned or forwarded it had even looked at it. Such are the returns in this paper; one gives the area of the Rajahmundry Delta 3,25,000 acres; another makes the produce of irrigated land 1-5th more than that of dry land; another makes out that the area of irrigated land was about 1-5th of what it actually was; another makes out that the increase of Revenue in the dry talooks of Rajahmundry was much greater than in those in the Delta, conveying the impression that the irrigation had been actually injurious. In these cases it was not necessary to make investigation into the matter; but every person who had anything to do with these statements had materials in his own head to enable him to know that they were false. When to such returns taken for granted in spite of the reader's own knowledge to the contrary, are added mere suppositions, and those so strange, that no name is attached to them, we have a complete specimen of a document of the past times. I do trust that this style of paper will now entirely disappear from the records of Government. The times of make-believes and anonymous suppositions have lasted long enough. Let us now deal with realities. What possible use there can be in taking a return which we have abundance of means of knowing to be totally false, and dealing with it gravely as if we knew it to be true, I cannot imagine, and I am equally at a loss to know what can be the use of supposing or allowing somebody without a name to suppose to us, when we can walk out of our tents a few hundred yards and see the case with our own eyes, or when we can send to a gentleman a few miles off, who has actually ascertained the state of the case. Why should not every officer who signs or forwards a return, be required to add something of this sort, "I declare that I have examined this return, and I feel confident that it is substantially correct." Or, on the other hand, "I declare that I have examined this return, and I have no reason to suppose it to be substantially false, but I have not sufficient means of satisfying myself about it." Or, "I forward this return as it comes to me in the regular course, but I cannot, for such and such reasons, think it is substantially a true return."

60. I cannot say less than that the whole of this paper is based upon returns so false, that they represent from 1-3d to 1-10th of the truth, and upon suppositions that are totally unfounded. And as to the effects of the works upon the revenue, that no less a mistake is made than the not mentioning the fundamental fact, viz, that the extra revenue due to the water had not been collected, excepting on an insignificant proportion of the lands. Even in the village of Biccavole, one of the few villages upon which at first a real increase of tax was laid, it is only this year (the eleventh in which it has had the water), that 1,000 rupees has been levied on the Enam lands for the first time. So that on the Enam lands alone in a single village 10,000 rupees has been lost to Government. Taking the present area watered at 6 lacs of acres (and allowing nothing for the relief of flooded lands, nor for the water transit of which all the remaining lands have the benefit,) and allowing a water-rate of 3 rupees per acre, the increased revenue ought to be 18 lacs, (independent of extension of cultivation), and the actual increase has been about 6¼ lacs, comparing the present year, 22 lacs, with the average of 10 years before the works, 15¾ lacs. The difference is nearly 12 lacs, and if we take the average from the first at about 1-3d of this, or 4 lacs a year, it will give, for the 11 years, 44 lacs as the sum that has been lost to Government through the neglect of the Revenue Officers, and even if we suppose that the people were allowed two years, use of the water free, which I consider to be quite a mistake, there would still remain 27 lacs.

61. I consider the remedy applied to this evil in the north-west, of employing a band of engineers to collect the revenue from their own works, worse than the disease, for to employ men in the comparatively simple work of collecting revenue, who are capable of planning and executing the works which will produce it, is surely a great waste of power. But I cannot say less than this, that, I think this case unmistakably calls for some most decided measures to

make the Revenue officers understand, that the rights of Government are not to be thus trifled with with impunity; and I am convinced that the greatest obstacle to the real and effective improvement of the country committed to our care generally will not be removed, till a Revenue officer is made clearly to understand that if he will not do his duty, another will be found who can and will do it The public removal of an officer from a district, who had proved himself incapable or unwilling to enforce the just claims of Government in this way, would do more to forward the improvement of India than a hundred reports.

62 I really must beg to be allowed to speak plainly on this point, for the welfare of India hangs upon it. Here is a thorough experiment as to what can be done on a large scale by irrigation and navigation; and if, after the engineers have by God's blessing carried out the works effectively, the revenue officers are permitted first to neglect their duty to collect the new revenue, and then to adduce the comparatively small increase of revenue as a proof how moderate the effect of the works has been, the result must be a totally false view of the value of such works, and a consequent backwardness to extend them throughout India. I feel quite sure that if a year before the Commissioner wrote his report, a letter had been sent to the Collector, assuring him that if something approaching to a fair water rate were not levied on every acre watered, and the engineer's certificate forwarded, declaring that he was satisfied that all the lands improved, without any material exception, were included in the area assessed, both the Collector and his sheristadar would be removed from their offices within six months, many lacs would have been added to the revenue, without any serious burthen to the people, by the time the Commissioner arrived. I have felt much inclined at times to urge upon the Government that the plan adopted in the north-west should be so far followed in Rajahmundry, as that an engineer should have been placed in charge of one talook, with collectoral and magisterial powers, to show what ought to be done, but great and indeed incalculable as the evil is of not showing by this palpable proof of collections what the benefit of such works is, that of introducing such a system, as the taking off a large portion of the engineers to do such work as collecting, would be still greater; at least it seems to me difficult to choose between the two.

But in reality I consider there is no necessity for resorting to such a ruinous measure, for if the proper Revenue officers and their sheristadars were convinced that their appointments depended upon their enforcing the plain rights of Government, the water-tax would be as regularly levied as the duties are performed in the Public Works Department.

63. The results of the works have indeed, even in revenue, been abundant as it is, but they certainly ought to have been at least three times as great. The village of Biccavole, which is a safe example, because it was before one of the best-watered villages in the district, has increased from 2,900 rupees, the average of 10 years before the works, to 10,900, or nearly four-fold, and this agrees well with the capability of the irrigated land to pay revenue. The old revenue was three rupees per acre, and four times this, or 12 rupees, would be at a moderate computation 33 per cent. on the gross produce. It is quite certain that this would be a very light assessment compared with watered lands in other districts, when it is considered that transit at three pice or four pice a ton a mile is provided almost to every man's door. The engineer reckons that at a low calculation (and I am sure it is so), the amount of water traffic is now 12,000,000 tons carried one mile per annum, upon which the total saving would be, at two annas a ton, 15 lacs; this alone being 5-6ths of what I have above supposed ought to have been added to the revenue, and more than double the actual increase.

64. If it should be a question how it has happened that Biccavole and a few other villages were made to pay so heavily from the first for the water, while by far the greater part of the lands have paid nothing, I answer, the reason is plain enough to any person acquainted with the real state of things in the districts. When the real increase of capability of these villages to pay revenue was perceived, it was at first fully acted upon; I think, indeed, that the increase of tax was rather severely enforced; but as soon as it was found that the engineers adduced this as a proof of the effects of the works, a change of proceeding on the part of the native Revenue authorities was of course adopted. The native cutcherry being all either landowners, or connected with landowners, their bias is of course against the interests of the Government, but this is counterbalanced

by their wish to approve themselves as able managers of the revenue affairs of the district, and the credit arising from an increase of revenue is earnestly desired as a proof of their capacity and faithfulness; but when the counteracting influence is withdrawn, and the credit of the increase is found to go to another department, and one, too, against which the Native Revenue Department have a very strong feeling as rivals and innovators, there is nothing to prevent their acting under their natural bias, and the consequence is, that every effort is made against an increase of revenue. This seems the only possible way of accounting for the monstrous returns both of area and produce with which the Commissioner was furnished. Every Revenue authority in the villages and in the talook knew, that the returns for the villages of Razole and Soanpillay, mentioned in Captain Rundall's letters, were quite false. They knew well enough that the whole of the village lands were watered, but they knew also that the European authorities would accept anything they chose to put before them, and would neither see for themselves, nor call upon the civil engineer to ascertain for them the actual state of the case.

65. After all this trifling with the claims of Government, the following statement will show the progress of the district now, in respect of revenue, under the new state of things.

IX.—STATEMENT of LAND REVENUE, &c. in *Rajahmundry*

Years	Fusly	Total Collection of Land Revenue		Average of after Collection.	Total Collection of Land Revenue	Average Collection before the Works	Averages of Collections since the Works.	Increase since the Works.	Public Works Expenditure, including Repairs.	Exports and Imports.	T Bagah Traffic, Number of Boats	Population of Delta Talooks of Rajahmundry.	Vigeswaran Channel Traffic, Number of Boats.
		Within the Fusly	Afterwards.										
1836–7	1246	14,69,000	2,66,000	- -	17,35,000								
1838	1247	14,79,000	2,19,000	- -	16,99,000								
1839	1248	9,49,000	3,34,000	- -	12,83,000								
1840	1249	11,68,000	2,92,000	- -	14,59,000								
1841	1250	11,63,000	2,68,000	- - 2,47,000	14,36,000	15,69,000							
1842	1251	13,54,000	1,80,000	- -	15,36,000	- -	- -	- -	- -	7,47,000	8,96,000 Average.		
1843	1252	13,99,000	1,17,000	- -	15,05,000	- -	- -	- -	- -	7,05,000			
1844	1253	11,55,000	4,00,000	- -	15,54,000	- -	- -	- -	- -	6,67,000			
1845	1254	15,74,000	1,58,000	- -	17,31,000	- -	- -	- -	- -	10,62,000			
1846	1255	15,09,000	2,40,000	- -	17,49,000	- -	- -	- -	22,000	12,98,000			
1847	1256	17,81,000	32,000	- -	18,12,000	- -	- -	- -	1,97,000	17,64,000			
1848	1257	18,41,000	32,000	- -	18,73,000	- -	- -	- -	2,85,000	17,38,000			
1849	1258	18,69,000	59,000	- -	19,29,000	- -	18,95,000	3,26,000	1,93,000	15,22,000			
1850	1259	17,62,000	1,29,000	- -	18,91,000	- -	- -	- -	2,62,000	13,15,000			
1851	1260	19,06,000	67,000	- -	19,73,000	- -	- -	- -	1,87,000	17,52,000	- -	7,11,400	
1852	1261	19,69,000	56,000	- -	20,25,000	- -	- -	- -	4,25,000	17,54,000	‡ 626		
1853	1262	19,75,000	90,000	- -	20,65,000	- -	- -	- -	5,01,000	19,70,000	1,608	- -	§ 1,783
1854	1263	19,72,000	48,000	- -	20,20,000	- -	20,48,000	4,79,000	7,05,000	20,97,000	6,524	- -	4,262
1855	1264	20,00,000	45,000	- -	20,45,000	- -	- -	- -	7,07,000	20,72,000	9,004	- -	5,911
1856	1265	20,10,000	26,000	- - 29,000	20,86,000			TOTAL	*34,84,000	24,81,000	9,340	7,51,400	5,218
1856–7	1266	21,78,000	32,000	- -	22,10,000	- -	22,10,000	6,41,000	- -	24,93,000	† 13,460	- -	‖ 6,134

---

* It must be observed that this is the whole expenditure on the Delta, but the returns of revenue are only for that part of it in Rajahmundry. There is some increase in the Masulipatam part of the Delta which should be added, but I have no distinct statement of it; it is considerable, but nothing to what ought to have been collected.

† The traffic has increased much more than the number of boats, as the average tonnage of each boat has probably more than doubled.

‡ Eight months. § Nine months. ‖ Seven months.

66. It will be seen from this, that while the land revenue has increased nearly 6½ lacs, the arrears of collections at the end of the fusly have diminished from an average of 2½ lacs to 30,000. We have thus positive proof that the district is now paying without the least difficulty a land revenue higher by nearly 6½ lacs, or 40 per cent, than it paid with great difficulty before

67. Taking the total expenditure in the Rajahmundry part of the Delta at 25 lacs,* we have a return of 25 per cent. at present in revenue, notwithstanding the neglect of the Revenue authorities. Were the whole of the watered lands assessed, the increase in old lands alone would be 18 lacs, at a very low assessment, or 72 per cent. upon the outlay.

68 Even as matters are, whether we look at the increase of revenue, the proofs of the ease with which it is paid, the astonishing increase of internal traffic, or the increase of exports and imports, it is impossible that we can be mistaken in concluding that the district has undergone a change such as no other district in India has undergone, excepting Tanjore, from the same causes, and there the change was very slow compared with this. And what reason can be imagined why the state of every district in India should not be thus radically changed, if the same means were applied?

69. There is one special remark which the above statistical statement seems to call for. It throws a great light on the subject of internal traffic On the Toolca Bagah the average per month the first year, 1851, was 88 small boats, the average for 1856–7 was 1,120, or an increase of thirteen-fold in number, but as the average size of the boats was greatly increased, the increase of traffic was probably not less than thirty-fold in five years On the Vigeswarum channel the average monthly number was 200 in 1853, and 876 in the first seven months of 1857, or more than a four-fold increase of number of boats in 3½ years, the increase of goods was probably six-fold In last month, July 1857, 1,200 boats passed through, and this not one of the busy months of the year. But what I wish particularly to bring to notice is the proof that this gives of the enormous amount of traffic that there would be in the country if water transit were general. In the case of this Vigeswarum channel, this traffic is carried on in spite of the following circumstances·

1st. The channels are not completed to any one of the three neighbouring great towns, Narsapoor, Masulipatam, and Ellore, so that the traffic is only with a portion of the Delta villages.

2d The supply of boats cannot keep pace with the demand, so that a monopoly price is charged for freight, 4 or 5 pice (or ½ *d*) a ton a mile, while the expense of working the boats is from 1 to 2 pie for short trips

3d. The towns with which communication is open from this channel are only Rajahmundry, Coringa, Cocanada, and Samulcotta, towns of 15,000 or 20,000 inhabitants each.

4th. There is no distant traffic connected with this line either to the interior or along the coasts. On long trips the traffic would certainly be carried on at 1 pie (⅛ *d.*) a ton a mile.

5th. This tract is as yet by no means in a wealthy state

6th The people cannot get at once fully into the way of using the water for traffic It of course takes some time for the people to discover all the ways in which they may take advantage of carriage at 4 or 5 pice a mile, when they have been accustomed to pay 2½ annas, and that only available at times.

70. Now, if we consider that under these circumstances here is a traffic sprung up of about 1,50,000 tons a year (12,000 boats, averaging 10 tons of load besides rafts), it is really impossible to estimate what the traffic will be, when—

1st. These channels, besides being opened to all the adjoining towns, and instead of connecting a small patch of country of 1,000 square miles with them, form part of an immense system of internal communication, connecting many millions of people, and 150.000 square miles of country in the north and west, with as many millions and as great an extent to the south and south-west, including vast cities containing hundreds of thousands of inhabitants.

---

* Deducting 5 lacs for repairs and 5 for the share of Masulipatam in the works.

2d. When the freight is reduced to 1 or 2 pie a ton.

3d. When the country is greatly increased in wealth, as it is rapidly becoming where, as in these districts, cheap transit and irrigation are provided; and,

4th. When the people begin to perceive more fully the extent of the opportunities which such cheap transit affords.

71. We may be certain that in such circumstances it would soon be ten times what it is now, or 1½ million of tons per annum; and this is besides a proportionate passenger traffic.

72. But what a palpable fact is thus brought before us, as to the question of water or land carriage. The Madras Railway traffic during the last quarter of last year was 60 tons a day per train, or 120 tons a day in all, equivalent to 37,000 tons a year (*See* para. 109 of Colonel Pears, Consulting Engineer to Government, 2d July 1857). In a note to para. 107 of the same letter he states that the quantity passing one point was only 55 tons a day in April, but the above 120 tons appear to be the average. On further examination, it appears that the 120 tons includes the railway material. In the same note Colonel Pears states the average daily numbers of tons carried by the common road in April at 800 tons. But on referring to the return to which he alludes, I am sorry to say that I am afraid it must be classed with the sort of returns of which I have spoken in this paper; at least, on examining it, there are so many apparent contradictions in it that I can make nothing of it. If Colonel Pears is correct in the conclusion he draws from it, that the road traffic was 800 tons a day, while the railway traffic was only 55 at the same point, the railway only carried 1-16th of the whole. The return is to me so unsatisfactory that I cannot feel assured that this is the real proportion; but there can be no doubt from all that Colonel Pears writes in his papers, that the railway does really carry only a small proportion of the total goods traffic.

This 37,000 tons is the traffic on a work which has cost, I believe, 60,000 or 70,000 rupees a mile, connecting the whole of the south-west, the west, and the north-west of the Presidency, with a city of 700,000 inhabitants, the seat of Government, and the principal seat of trade. This monstrous work thus carries one-fourth part of the goods traffic that exists on a canal that cost a few hundred rupees a mile, and which connects a little patch of country of about 1,000 square miles with a port and town of 17,000 inhabitants.

73. Is it possible that anything could put in a more striking light the total unfitness of such a railway for this country? Let us again compare the saving to the country by the one traffic and the other. The rates on the railway are such intentionally as shall be only a hair's breadth below the price paid on the common road with which it competes. See para. 122 of the same letter. Colonel Pears says, "Mr. Fletcher's fundamental principle seems to be to regulate his rates by those existing on the roads, to make them only so far below them as may be necessary to monopolise the existing traffic." Thus the sole object in view is to carry the goods at the highest possible rate, so that the saving to the merchant is a mere nothing, while on the canal there is a substantial saving of at least two annas a ton a mile, or nearly 20,000 rupees a year per mile on the present traffic, 20 times the cost of the canal, allowing a portion of its cost to be charged to irrigation. The gross receipts of the railway are at present about 100 rupees a week, or 5,200 rupees a year, taking half of which for profit, gives 2,600 rupees a year on an expenditure of, I believe, about 70,000 rupees, or 3¾ per cent. (without any allowance for depreciation or repairs, everything being at present new), leaving a dead loss to the country of 1¼ per cent. or about 70,000 rupees a year on the 80 miles now open; and this is by way of relieving the country. This, too, is the first 80 miles out of Madras; the receipts at 200 miles from Madras will be a mere fraction of what they are near the city. Had a canal been cut on the same line at a quarter the cost of the railway, I have no doubt there would have been a traffic of 500,000 tons, much more likely a million, and that carried at a tenth of the charge on the railway; so that at a saving of one anna a ton a mile there would really have been a relief to the country by the half million only, of 10,000 rupees a mile, or 8 lacs a year, by an outlay of 15 lacs, instead of a loss of 70,000 rupees, by an outlay of, I believe, 60 lacs. What is here said about goods is equally applicable to passengers; the number

of passengers would probably be increased tenfold at least, if carried at one-quarter or 1-10th the railway rates, for by canal they could certainly be carried at ½ pie, or $\frac{1}{16}$ *d.* per head per mile. By Colonel Pears' returns it appears that the average number of passengers for the three months was 300 a day, or 93,000 a year, which certainly cannot be 1-10th of the present travellers, and probably not 1-30th of what there would be were the charge ½ pie per head per mile on a canal, instead of 4 pice, as on the railway, for the lowest class of passengers. The transit boats, on the Cocanada Canal, carry at present on an average 80 passengers a day to and from a town of 17,000 inhabitants, or one a day for each 210 inhabitants, the Madras Railway carries 300 to and from a town of 700,000 inhabitants, or 1 to 2,300, less than 1-10th of the proportion in the canal. The canal transit is at 1 pie a head, with a rato of three miles an hour; the railway charge is 4 pice a head, and the speed 20 miles an hour. The profit on the canal transit is about 24 per cent., on the railway 3½

On the canal, indeed, there is nothing charged for the use of the work, but this does not affect the question materially, because the cost of making the canal navigable is so small, perhaps 2,000 rupees a mile, and the traffic already so great, that the charge to meet an interest of 10 per cent. would not exceed 1-12th pie a head per mile. We have thus the most palpable proof of which the country requires even for its passengers' traffic, low speed and low prices, or high speed and high prices, whether we judge by the number of travellers or the rate of profit. If the canal were worked with steam, the charge might be reduced one-half, and the speed increased to eight miles. Colonel Pears says (para 20), "The actual results are notorious. None, as a rule, but the wealthiest classes havo travelled by this rail. On all occasions of feasts at Trivellore, which lies close to the rail, a common and very inferior road, running nearly parallel to the rail, has presented to the railway officials the unsatisfactory spectacle of thousands of people, some in bullock carriages, some on foot, passing to and fro between that town and Madras." How terrible it is to see such unaccountable mistakes made in planning works for the improvement of India. The only thing that is thus gained by the railways is to show in the strongest possible light the importance of water carriage, and the enormous advantage that a district like Rajahmundry, provided with it, must have over one still paralysed by land carriage.

74. The railway, instead of creating traffic, carries only a small portion of the old traffic, while in the Vigeswarum Channel the traffic has increased about six-fold in three years and a half, and therefore we may conclude that at least 5-6ths of this has been created by the water carriage The increase in the last year has been at the rate of 5,000 boats, or 50,000 tons for the year, the increase in a single year among this insignificant population being much more than the whole traffic on a railway entering the capital of the Presidency. We thus see, as I wrote some years ago, that the effect of one of these great railways is to seal up its line of country from cheap transit for ever, for I suppose it will now be impossible ever to cut a canal on that line, and because 60 lacs have been wasted on the railway, the country must continue to waste 10 or 20 lacs a year in the cost of traffic, and thus, instead of the railway attracting or creating traffic, it will assuredly be the means of destroying it on that line, and driving it off to those parts which have water carriage. The question of the effect of the public works in Rajahmundry cannot possibly be rightly understood without this discussion of the comparison of land and water carriage, as now illustrated by the actual operation of the two kinds of works. The results on the northern canal from Madras correspond with this Leading, as it does at present, to nothing, without even a common road to connect the end of it with the great northern road, the traffic last year was 120,000 tons, three times that of the railway. Were it connected with the Kistnah and Godavery Channels, it would soon be increased twenty-fold.

75. The consulting engineer urges the reduction of the charges on the railway, and no doubt he is right in supposing that it would be politic to do it, but the country would gain hardly anything if the whole 300,000 tons were transferred to the railway, because the charge would still be only the least possible below that of the common roads. The defect is in the apparatus, which cannot carry cheaply.

76. Just as I had concluded this paper, the Appendix A. of the Commissioner's

Report, which I have alluded to as a paper I had not seen, was shown to me. This paper greatly increases my astonishment at the report. It seems to me such an extraordinary refutation of the report itself, that I think it necessary to make considerable extracts from it. It begins as follows:—"In proceeding to notice here more particularly the several results of the Godavery irrigation as it has affected the Government revenue, or the resources of the country, it is to be premised that, in order to afford encouragement to the general introduction of the more laborious and expensive system of wet cultivation, and to inspire confidence in the advantages to be derived from these works, it has been determined that no additional tax should be imposed upon any of the Government lands, until they may have enjoyed the benefit of irrigation from the Godavery Channels for two successive seasons. After that period, the Teeiva Jasty, or extra assessment, is to be levied upon the following principle. The ryot to take the undermentioned proportions of the gross produce as his share, viz.:—

On dry lands - - - -	Three-fifths,
On wet - - - - - -	One-half,
On garden - - - - -	Two-thirds,
On sugar cultivation - - -	Three-fourths,

and the remainder to be considered as the due of Government." Now one-half of the gross produce of the irrigated land would, according to the estimate given in this same Appendix, as "the results of numerous inquiries and many careful experiments made on the spot by the late Commissioner (the Honourable Mr. Elliott)," with the view of obtaining the average produce of the land, taking the most moderate of the data thus called, is, that the out-turns of the whole irrigated area calculated, and turned into money at the average market prices of the season, is 31½ rupees per acre, including straw It must be allowed that this is at a high price, 20 rupees a candy, and the average may perhaps be taken at 14 rupees, which would make 22½ as the produce; but against this must be set—1st, that there was hardly any rain that year, so that the produce was low; 2nd, most of the land was in its first or second year of cultivation for rice, 3rd, there was hardly any second crop, if any at all. Allowing for those things, we may certainly reckon that this estimate would be under the mark for the value of produce in average years. Hence we conclude that the Government rent to be half of this would be about 16 rupees an acre; the rate the Commissioner in this report proposes is 1¼ rupee in addition to the former average Revenue of 3¼, or 4½ rupees per acre, not one-third of what he thus lays down as sanctioned in "the liberal regulations which received the sanction of Government on the 5th January 1855.' He goes on to say, "The additional demand thus made, after the free enjoyment of the water for two seasons, to be imposed, one-half in the first year and the full amount in the second. Under joint rents, this water cess can be imposed only on approximate data, greater precision not being attainable till the assessment of the land shall be finally fixed. The additional cess is to be made on the same principles on the permanently assessed lands and enams, and in each case two-thirds of the demand thus calculated to be fixed as a water tax. These liberal regulations, which obtained the sanction of Government on the 5th January 1855, necessarily defer the period of the direct returns of revenue to the public treasury."

77. In para. 2, he proceeds to say, "The collections in some villages of the Capaveram and Biccavole Talooks, under the T. Bagah Channel, are described in statement 31, &c.* * * * In the 23 villages which have had the advantage of water for five years, the increase is about 90 per cent. The ratio of increase of the remaining villages of the same talook not brought under irrigation have been 27 per cent. or 37 per cent., if fusly 1263 is compared with the former average." Now here he shows that the revenue in the irrigated villages had nearly doubled, so that the same increase throughout the Delta would add about 3¼ rupees per acre, nearly three times the 1¼ rupee proposed by the Commissioner, and making, on 12 lacs of acres, 42 lacs of rupees per annum for the increase on the whole Delta when fully irrigated. In para. 6 he says, "As the irrigation commenced, with the exception noticed, from fusly 1262, and it was not till the following year that it became general, the period of immunity from additional tax will not expire for some time to come, and a considerable period must elapse before the land tax can be brought to a fair standard; any attempt,

therefore, at the present time to ascertain the direct returns derivable from the expenditure incurred in the irrigation works is altogether premature." Compare this extract with the 21st and following paras. of the report, where, after showing that there was an increase of revenue of 2,89,000, but that much of this was owing to other causes beside the water, not one word is said about this statement being in fact no measurement at all of the effects of the annicut, because the water tax had not been levied.

78 In the 11th para. he goes on to quote as follows from an official memo. of the preceding Commissioner, dated 11th July 1854: "The indirect benefits conferred on the country by the greater facilities for transit, the increased demand for labour, and the circulation of the large sums expended on the works, cannot be expressed by figures. But not the least remarkable proof of the operations of these influences is found in the spirit of independence which it has called forth among the agricultural labourers, who were previously little better than agrestial slaves Their sole remuneration consisted in the grain allotted to them at the threshing floor, the value of which at 8 rupees the pooty did not exceed 12 rupees a year, together with the annual gift of a cloth worth a rupee more These men can now earn from 2 to 3 rupees a month, and what is better, they are no longer afraid to leave their masters, but boldly sally forth to seek their own fortunes" "The increase in the trade of the province must likewise be ascribed in a great degree to the improvement of inland navigation, and the large expenditure on the public works has also had its effect." "These, combined with other causes, such as the establishment of sugar factories, the demand of oil seeds in the European market which has sprung up in the last few years, have raised the value of exports from about 3½ lacs of rupees in 1841-42, to upwards of 16 lacs in 1852-53, while the imports of other goods besides grain, have in the same period risen from somewhat above half a lac to 2 lacs of rupees"

79. In para. 12, he says, "Further indirect advantages may also be traced in the increased prosperity of the extra sources of revenue since the annicut operations were begun In the following comparison the inland transit duties abolished in 1814 have been omitted. The Sea Customs, which show an increase, although considerably reduced under Act 6 of 1844, have been retained, and the salt transactions are confined to such as relate to the consumption in the district The average receipts have thus risen from 2,47,818 rupees to 3,55,604 rupees, giving an average annual increase of 1,07,756 rupees."

80. In para. 14, he says again, "In viewing these results it must be borne in mind, as above stated, that no general measures have yet been carried out for the increase of the revenue, and that only a trifling addition to the land rent has as yet been imposed on one small portion of the area irrigable under the works."

81. Had these paras been put into the body of the report, and a simple tabular statement such as I have given, showing the actual progress of the district, commencing exactly with the expenditure on public works, been given, no sensible person would have been misled by the report itself; as it is, the only effect it would produce is to give a totally false view of the whole matter, and thus deprive all India, for an indefinite time, of the incalculable benefits which water for irrigation and water for navigation, and it alone, can give to it.

82 If (para. 29, end) "the annual land revenue has been augmented by a sum probably exceeding 130,000 rupees" (and if this were the result of a fair water tax levied on all the lands then watered, 1855); if (para 51, end) it would be hardly safe to fix a higher rate than 1¼ rupee per acre, the probable increase to Government from the land, on the irrigation being perfected (making a total of 4½ rupees per acre for Delta land of the richest quality irrigated with river water), if (para. 51) "it will be necessary to raise the water by the ordinary means in use above the level afforded by the annicut," and the extent of such land is supposed to be considerable; if (para 69) "viewed broadly, the Delta may be said to be nearly fully occupied, having an assessment" (3¼ rupees per acre), which approaches to a maximum standard, the main function of the annicut will be to give permanence to a fluctuating revenue, "then most assuredly, if the works cannot be pronounced an utter failure, at least all the great things that were said of them in anticipation, and all that have been said about them as conclusions from the actual results are mere imaginations and delusions, and the utmost that can be recommended is, that now that they have been executed they may as well be kept in repair, but that to set about spending

half a million sterling in another district would, after such a result, be a dreadful mistake. But if, on the other hand (Appendix A, para 1,)" the wet land will bear an assessment of half the gross produce (31½ rupees as estimated in para. 10), or 16 rupees an acre, 12 rupees per acre above the former assessment, or 144 lacs on the whole area; if (para. 3) on "23 villages first watered, the increase of revenue is 90 per cent." (though nothing approaching to a fair water tax had been generally levied even in those villages); if (para. 11) "a spirit of independence has been called forth among the agricultural labourers, who were before little better than agrestial slaves," their former remuneration being 12 rupees of grain and a cloth worth 1 rupee, and they can now earn from 2 to 3 rupees a month, and what is better, are no longer afraid to leave their masters, but boldly sally forth to seek their own fortunes; "and the value of exports have increased from 3½ lacs in 1841-2, to 16 lacs in 1852-3, while the imports of other things besides grain have increased from ½ lac to 2 lacs;" if (para. 12) "the extra revenue had increased 40 per cent., 1,07,000 rupees;" if (by the statistical statement given in this memo.) the real increase of land revenue alone is 6½ lacs, 35 per cent. upon the previous average; if, by the same statement, the outstanding balances on the last day of the fusly have fallen from 2½ lacs. or 16 per cent. of the revenue, to 30,000 rupees, or 1½ per cent.; if the increase of traffic on the main canal has been about 30-fold in five years; if the increase of revenue of 6½ lacs is, in spite of the astonishing neglect of the Revenue officers, who have levied a little more than nominal water-tax on not one-fifth of the lands irrigated, if the saving on the present water traffic, as compared with land carriage, is on a low estimate, 15 lacs of rupees a year; if there will soon be completed at least 1,000 miles of water communication under the annicut at 1 pie per ton per mile, or 1-30th of the land rate; and if all this is effected at an outlay to the present time of about 30 lacs; then I think we may, without the smallest possible room for doubt, conclude that nothing comparable to this has yet been accomplished by any means proposed for the material improvement of India, that there is not the smallest hope of anything more effective being devised, and that consequently we have now sure and certain ground for extending these blessings to every other district in India at once, as the only, and with the continuance of the blessing of God which has attended us hitherto, the sure remedy both for the poverty and consequent ignorance of the people and for the financial difficulties of the Government. Such an increase as has been already actually realised in this one district, though certainly not 1-10th of the full revenue benefits have yet been received, viz., 40 per cent. in all the districts, would add 12,000,000 a year to the India Treasury, and this increase has been accompanied with everything that can possibly indicate complete present relief to the people, and a future full of hope.

83. Lastly, if 70,000 rupees a mile spent on a railway leaves the principal part of the traffic on the common road, and carries the remaining 37,000 tons at the least possible charge under the common road rates, thus affording only a nominal saving to the public, while a new road, without charges for repairs or depreciations on the 80 miles leading from the capital of the Presidency does not pay its interest, but leaves a dead burthen upon the poor natives, shutting up also for ever the line it occupies from cheap transit, and all its following advantages, and if at the same time a few hundred rupees a mile spent on making an irrigation canal navigable creates in a few years a trade of 150,000 tons a year in an out-of-the-way part of the country, hundreds of miles from any great city (a traffic four times that of the railway entering the capital), and that in spite of a demand so far exceeding the supply of boats as to keep the charge for freight to three or four times what it need be, the actual cost of carriage being about 1-10th of what a railway can profitably carry at; then we may as safely conclude, that the whole railway system is only an obstruction to India in its present state, and that water, and water only, for transit can possibly meet the wants of the country.

84. What is said about goods is equally applicable to passengers, as I have shown above.

85. How can I help, upon this review, once more pointing out the grievous mistake that has been hitherto made in giving so much attention to the expenditure and so little to the income of the country. Commission after commission

has been appointed to investigate what saving can be made in the expenditure, and under the pressure of a balance against the country, the recommendations of economists have unhappily been so far attended to that the country has been denuded of the troops necessary for its defence, with the present awful results; and, after all, the utmost that can be obtained by such reduction of expenditure is comparatively trifling, whereas there seems, as it were, no limit to the augmentation that might be made to the income by such means as have been tried in Rajahmundry. The increase there of 40 per cent. upon the revenue, is but a small portion of what the district even already can pay, not only without oppressing the people, but with the greatest relief to them at the same time, and if during the last 20 years such works had been carried on in every district, the consequences would have been that there would have been more than ample funds for every purpose; the country would not have been denuded of European troops, and, humanly speaking, all the late terrible events would have been prevented

86 The whole question of these works lies in a nut-shell.

1st. Such works can be executed at a charge of at most 6 annas per acre per annum in interest and management;

2d The increased value of produce on lands so irrigated is, on the most moderate calculation, 20 rupees an acre (viz., 10 rupees as dry land and 30 as wet).

3d Therefore, if only 20 per cent. of the increase is taken as tax, the finances will be relieved to the extent of 4 rupees per acre per annum, and the people will gain 16 rupees.

4th. Besides this, the people will have the whole benefit of the water carriage, which alone would probably be fully equal to the whole water tax that they would have to pay.

87. As it will be allowed by all that this is a great national question, I think I may without presumption earnestly request that what is thus said upon it on both sides may be printed, that all who are interested in it may have an opportunity of forming their own judgments upon it.

(signed) *A. Cotton*, Colonel of Engineers.

Madras, 12 September 1857.

P S—As a further proof of the groundless nature of the proposed rate of 1¼ rupee per acre for water and water carriage, &c, I may refer to Captain Taylor's pamphlet, giving the actual cost of watering land by wells throughout the territory of Bombay and Berar. He there shows that the average cost per acre per annum to the land-owners is 27 rupees. If numbers of individuals over a great extent of country find it worth their while at this cost merely to raise water for their land (and they would not do it if there was not a considerable profit on it), we may judge what sort of a charge 1¼ rupee is for water, water carriage, &c; we see it is 1-22d part of what land-owners willingly pay for water alone without cheap transit, &c.

CORRESPONDENCE referred to in Para. 6 of the above Memo.

(No. 477.)

From *J. Goldingham*, Esq., Commissioner, Northern Circar, to Captain *Rundall*, Civil Engineer, Godavery Division.

Sir,

GOVERNMENT having forwarded to me extracts paras. 15, 16 and 17 of your report on the Nuggarum aqueduct, in connexion with the imposition of an additional cess for the water received, I have the honour to request that you will be good enough to furnish me with information on the following points:

From what accounts the area, viz., 60,000 acres, the whole of which you observe may be irrigated, has been taken. The entire gudicuttoo, or cultivable area, according to the village accounts, is 26,533 acres of land, liable to full assessment, and 18,529 acres enam; total, 45,162.

For what portion of the 60,000 acres has water been supplied by the Irrigation Executive Department? According to the revenue accounts received from the

Collector, the land irrigated in fusly 1264 is 2,607 acres Government lands, and 2,389 acres enam; total, 4,996 acres.

Within what period water sufficient for the full extent of 60,000 acres will be furnished?

2. I shall also be obliged for information in regard to the value of property saved in 1853 in the Nuggarum talook, its amount, and how calculated.

3. As you are in possession of the necessary data for furnishing the above information, I shall be glad to receive it at your earliest convenience.

I have, &c.
(signed) *J. Goldingham*,
Commissioner.

A. Cotton, Colonel,
Commandant of Engineers.

(No. 404.)

From Captain *F. H. Rundall*, District Engineer, Godavery Division, to the Commissioner of the Northern Circars.

Sir,

I have the honour to acknowledge the receipt of your letter of the 26th ultimo, and to express my regret at having allowed it to remain so long unanswered. There were, however, certain returns which, not having at hand, I wished first to obtain, that I might bring them to your notice.

First, as respects the area of land in the talook. The grounds on which I stated this to be 60,000 acres are measurement of the trigonometrical survey, and a comparison of it with the village returns. The former makes the Nuggarum talook contain 120 square miles, which, if we calculate at 500, instead of 640 acres to the square mile, will give 60,000 acres, leaving, 16,800 acres occupied by sites of villages, sandy tracts near the sea, &c. The village returns give 7,086 pooties nearly, from which 1,110 pooties are deducted for village sites, poontahs, &c., leaving 5,975½ pooties as cultivable land. At 8 acres to the pooty, the whole will amount to 47,800 acres; but in all the villages which have hitherto been surveyed and measured in detail by the Sub-Collector, the actual quantity of land has been found to vary from one-third to one-fifth more than that entered in the accounts. So that the pooty, though professedly only 8, in reality contains 10 acres, and thus the area of the cultivable land in the talook will be found to amount to nearly 60,000 acres.

Secondly, as respects the amount of land actually watered. This I do not pretend to give with exactness, but can certainly give a near approximation, arrived at by two methods: one by the quantity of water actually consumed in the talook, as measured by the depth flowing daily over the aqueduct, every drop of which is carefully treasured and prevented from running to waste: the other method is by computing the area commanded by each channel. Not only are the lands under the newly excavated irrigating channels supplied, but immediately the rains have ceased the old drainages are bunded across, and filled, and so supply water to a large extent of land. Moreover, the salt swamps, hitherto left waste, have been flooded with fresh water, and are now cultivated like the rest of the land. There were never less than 20,000 cubic yards an hour going over the aqueduct, and generally more. The area of land supplied by the channels and drains is near 30,000 acres, so that when I stated 20,000 acres as the quantity irrigated, I know I was well within the mark

The return made by the native revenue authorities naturally falls a long way below this, amounting only to 650½ pooties, or 6,553 acres. This is not to be wondered at; but the degree of reliance to be placed on the return may be judged from those of the two villages of Razole and Somepilly. In the former, out of 89¼ pooties, 6¾ zeroyetty and 15¼ mauneyem, or a total of 22 pooties only, were returned, leaving 67 pooties as unwatered. While in Somepilly, out of 25½, 2¼ of zeroyetty and 2¾ mauneyem were watered and 20½ unwatered. As these two villages lie right under the main channel, and I had myself seen almost every acre of them under water, I had them measured, when the whole was found to have been irrigated. The villagers seeing that the matter was thus thoroughly investigated, no longer pretended concealment, but acknowledged the fact. In both these cases you will perceive the return is just 1-4th of the truth. If therefore the whole return is multiplied by four, it will be found to coincide with my statement, and be near the truth

As regards the value of property saved during the year 1853 The tahsildar estimates the value of the produce raised in the village of Somepilly on the land irrigated by the annicut water at 1,746 rupees, for 10 pooties of zeroyetty land, thus giving 174 rupees per pooty. On two parcels of land in the same village, measured by my own orders, one, a third-rate crop, yielded at the rate of 12 pooties of grain to the pooty of land. The other, a second-class crop, on second-class land, yielded at the rate of 15 pooties, which, with grain at the price of 14 rupees, made the value in the one case 168 rupees, in the other 210 rupees per pooty. We may safely, then, take the tahsildar's estimate, and if in 1853 we allow for an average over the whole talook, that property to only one-half that amount was saved, we should have for its value of 5,500 pooties the sum of 4,73,500 rupees. This is reckoning that the whole crop consisted of grain, but in the Nuggarum talook the more valuable products of sugar-cane, chillies, and other garden stuffs, are raised, which would add at least another lac to the above amount, and, lastly, the most important item of farming, "the live stock," must not be forgotten, for without the timely supply of water brought by the aqueduct, it is impossible to say how many of those poor creatures might have perished in such a year of drought

In the above calculations no estimate is made for the value of the Dalwa crop: but perhaps it would be premature to reckon upon this, as it is yet but a novelty I must, however, in conclusion, beg leave to point out that all the return as yet levied has been the small sum of 5,000 rupees this year from the zeroyetty lands Another fusly has passed, and the enamdars are still left untaxed.

I have, &c
(signed) *F. H. Rundall*, Captain,
District Engineer, Godavery Division.

District Engineer's Office, Godavery Division,
Camp at Dowlaiswarem, 25 July 1856

(No 79.)

From Colonel *A. Cotton*, Commandant of Engineers, to *H. Forbes*, Esq , Secretary to Government.

Sir,

I HAVE the honour respectfully to return my thanks for the papers which have been sent to me by the Board of Revenue, on the subject of the results of the works in Tanjore and Rajahmundry, and to forward my remarks upon them.

I need hardly repeat how essential it appears to me that both sides of this question should be printed, and that every one concerned should thus have some means of forming his own judgment on the subject of a question of such vital importance as that of the irrigation of India.

I have, &c.
(signed) *A Cotton*, Colonel,
Commandant of Engineers

Madras, 4 March 1858

MEMORANDUM on the Papers of the Board of Revenue, dated 21 May 1855, on the Statements made in Colonel *A. Cotton*'s Book on Public Works in India, respecting the Effects of Hydraulic and other Works in *Tanjore*

1 IN the 4th para. the Board say, ' Colonel Cotton appears to omit expenditure on repairs." In the passage which they are alluding to it is expressly said, " besides current expenses for the repair of existing works."

2. In the same para. the Board state that the actual sum expended was 43 lacs on irrigation works, but by their own statement this was in 52 years, not 50 years, the period I mention: it was under 40 lacs in the 50 years. They

then state that besides this, there were nine lacs, including two lacs of surplus pagoda funds on other works, which would make 49 lacs in all. There is no doubt that the sums expended on roads and bridges ought to be considered. The reason why they were not, doubtless was, that they were not entered in the statements that I received. The Board then go on to state that the sum expended was really 52 lacs, instead of 20.

3. It is very necessary to call particular attention to this at starting, because it shows unmistakably the bias under which the paper is written. Nothing but a violent bias could induce gentlemen to offer it as their opinion, that, in calculating the results of works, all the cost of repairs for 50 years should be added to the first cost, and the total reckoned as the capital employed. I need not use arguments against so palpable a mistake. Of course I could not say positively what portion of the expenditure was properly capital, and what was for repairs, but when I allowed one-half for each, it was certainly quite sufficiently near to be substantially a true representation of the case, while to charge the repairs as capital, was palpably a false view of the matter. Reckoning the total capital at 20 lacs, and the mean during the whole period, consequently, at 10 lacs, 20 lacs for expenses in 50 years—40,000 rupees a year would be four per cent. per annum, supposing that the whole of this money was spent on works executed for this capital; but this sum in repairs includes the cost of repairs of all the former works also, and cannot therefore be much out of the way.

4 To the 20 lacs, however, might certainly be added half of the nine lacs expended on roads and bridges, so that the real capital was 24 ½ lacs for the 50 years, instead of 20, as I have given it.

5. In the 5th para. the Board again say, "It may be assumed that Colonel Cotton alluded not only to the Land Revenue, &c." What can be the use of these insinuations? I expressly say the revenue of Tanjore, not the land revenue, and the sums I mention are the whole revenue; and certainly it would be giving a false view of the case not to give the whole revenue; the power of the people to pay taxes, and the amount of exports, are of course very dependent upon the wealth of the people, and whether their produce exceeds their consumption, &c.

6 They then proceed to show that the average collections of the first five years was 30,00,000 The only difference between this and my amount arose from my taking the average of the first four years, instead of five, as the Board have done, which gives just 30 lacs, as the Board have. I omitted the first years of the first series of five in the returns, because it was evidently so extraordinary a year, as to vitiate the average, if taken into it.

7. The Board then proceed to show that the average of the last five years was 48 lacs, not 50, as I have stated. In the first place, I beg to observe, it was quite unworthy of the Board to argue the matter in this way, because I was evidently speaking in round numbers, and the getting rid of one lac at the beginning, and two lacs at the end, did not affect the substantial truth of what I was exactly right. First, the Board give the average, not of the last five years of the series of 50 years of which I spoke, but of the 52 years of which they had given the expenditure.

8. The revenue of the five years I spoke of were—

1846 - - - - - - - -	51 lacs.
1847 - - - - - - -	51 ¼ ,,
1848 - - - - - - - -	43 ¼ ,,
1849 - - - - - - - -	46 ½ ,,
1850 - - - - - - - -	48 ,, *
	5) 245 ¼ ,,
	49 ,,

9. The

---

* So in original

9. The average would thus be 49 lacs, but this average was undoubtedly below the real average revenue of the district at the time, on account of the very low prices of the last three years: the average was at least 50 lacs. The revenue of the following years has been—

1851 - - - - - - - - -	49 lacs.
1852 - - - - - - - - -	49 ¼ „
1853 - - - - - - - - -	51 „
1854 - - - - - - - - -	52 ¼ „
1855 - - - - - - - - -	54 ½ „
1856 - - - - - - - - -	58 „
1857 - - - - - - - - -	56 „

10. Thus it will be seen that the five years from which the Board compute their average of 48 lacs, have years of 51 and 51½ lacs immediately preceding them, and 51 and 52 ¼ lacs immediately following them.

11 The increase of revenue is therefore perfectly correctly stated at 20 lacs in the 50 years, though certainly the expenditure should have been stated at about 24½ lacs, instead of 20, the difference being owing to the omission of the sums expended on roads and bridges, from statements I had received

12. I shall not attempt to answer the Board's arguments "that the greater part of the increase cannot be ascribed to the outlay on public works."

13 Nobody knows better than the members of the Board the effect of irrigation on the produce of the soil, that it is increased threefold, and consequently that increase of 20 lacs on 30 in a district well watered, represents a very small part of the increased wealth of the people, nobody knows better than they do. that the saleable value of lands in Tanjore is 10 times that of the adjoining unimproved districts, and that while its revenue has increased so greatly, there has been no increase at all in the others

14 I subjoin a statement of the revenue of the two improved districts of Tanjore and Rajahmundry with the two adjoining ones It will be seen there, that, while Vizagapatam had fallen off half a lac, and Masulipatam had remained stationary, Rajahmundry had increased 5¼, according to this statement, and that, while the unimproved part of South Arcot has fallen off one lac, and Madura has increased only 1¼ lac, the Delta of the Cauvery (Tanjore), with the two improved talooks of South Arcot, has increased 10½ lacs. All the laboured arguments in the world cannot get rid of the conclusions that these plain statements will convey to any unbiased person, neither will any arguments convince others, or at least bring them to acknowledge that they are convinced, that works which make the lands produce three times as much as before, will have more effect upon the revenue, as well as upon the wealth of the people, than the wisdom of all the sheristadars in the Presidency can possibly have in arranging the details of the mode of collecting that revenue.

15 It must not be forgotten also, that this increase of revenue of 20 lacs is, notwithstanding, a net reduction of the extra taxation of 1½ lac, by the abolition of the land transit duties

16. In a note to para. 9 the Board state, that the increase of revenue in 30 years before the annicuts, was 15 lacs, and the expenditure on public works in that time was 30 lacs, while in the 17 following years the expenditure was 20 lacs, and the increase only 2¼.

17 On this I beg to remark, 1st That the increase not being proportioned to the expenditure proves nothing, unless the Board had shown that additional taxes had been levied or proportioned to the increase of produce and diminution of the cost of transit. Everybody knows this has not been the case in Tanjore, by far the greater part of the lands that have been so benefited by the annicuts pay no additional tax whatever, while, on the other hand, 1½ lacs of extra taxes have been taken off But the benefits of the latter expenditure appear plain enough in the enormous increase of the saleable value of land of late years. This is the same refuge that has been occupied in the discussion about the results of the works in Rajahmundry The revenue officers determinately refuse to levy the water rate, and then, concealing this fact, argue that the results of

the works are not so great as was expected. But, 2d. To state that the increase of revenue has only been 2¼ lacs.

18. I have shown above how false the average of the later years given by the Board is, viz., 48 lacs.

The true average before the annicuts is—

1832	44	lacs.
1833	46¾	„
1834	48½	„
1835	46	„
1836	44½	„
	5) 229¾	„
	* 46	„

19. And that of the later period at least 50 lacs, making a difference of four lacs, while the average of the last five years to the present time is—

1853	51	lacs.
1854	52¼	„
1855	54½	„
1856	58	„
1857	56	„
	5) 271¾	„
	* 54¼	„

But this increase is, as I have stated (besides 1½ lac net taxation) abolished. 3d. The Board further state, that in their last year, 1852-53, a hurricane desolated the district on account of which 2½ lacs of revenue were remitted; but so great was the destruction of property (at least 20 lacs, as I was informed), that the revenue of the following years must have been materially affected by it.

20. Thus it is evident that this note will not have the least examination.

21. In the 14th para the Board again say, "It is presumed that Colonel Cotton alludes to the general revenues." I can only repeat, that there is not the least room for the Board's "presumption," when I explicitly say the revenue, and not the land revenue.

22. I must acknowledge that I have made a mistake in what I said in my book about the increase in latter years. I have said the revenue had increased from 42 to 52 lacs since the construction of the annicuts. The first average of 42 lacs was not that of the years immediately preceding the annicuts, but of those preceding the commencement of the series of great works for properly regulating the supply and distribution of the water. It was in 1828 that I was first ordered to Tanjore, for the purpose of reporting upon the then alarming state of the rivers. Previous to that time every work had been executed as an isolated improvement, and it was then that, in consequence of the threatening state of things, the Government had come to the conclusion that it was absolutely necessary to take the whole subject in hand; a system of works calculated to regulate the whole water supply was therefore planned, and they were commenced in 1830.

23. The annicuts which were planned in 1833, and executed in 1836, were only a portion of that general system of works. It is quite evident from my mentioning the average of 42 lacs, which was not that of the years preceding 1836, but which was that of the years preceding 1830, that the mentioning 1836 as the beginning of the period I intended to speak of, was an oversight.

24. Allowing for this, the statement I have made of an increase of 10 lacs, is perfectly

---

* So in original

perfectly correct. The increase in Tanjore alone was 8 lacs, not allowing for the abolition of the transit duties, and in the two Delta talooks of South Arcot about 1½ lac, making in all 9½ lacs.

25. In the Board's calculated increase of 4 lacs, they do not include that in South Arcot, which was caused by the operation of the new works I have also made a mistake in stating the revenue of Tanjore at 52 lacs, though it had one year risen to 51⅓; the average, as I have shown above, was at least 50, exclusive of abolished taxes

26. I must acknowledge that this passage was carelessly written, but the matter had been examined by me a hundred times, and I had fully assured myself of the truth of what I meant to have said, that the increase of revenue from the new system of works, of which the annicuts formed a part, was 10 lacs. The works executed in 1830, 1831, 1832, 1833, 1834 and 1835, were large undersluices for discharging the muds of the Cauvery Calingulahs, for diminishing the floods in Tanjore, extensive excavations of the channels in South Arcot, &c These works were essential parts of the new order of things.

27. I do not go into all the details which the Board dilate upon in the following paras Though generally intended to show the advantages of the annicuts, all such writing rather tends to obscure the truth. The broad facts, as I have stated them (I beg to urge), show the matter in its true light, and leave no possible room for mistake Here is a district which has been improved by the application of capital and western knowledge on public works, chiefly hydraulic, and this district in 50 years increased in revenue 20 lacs (including the talooks of South Arcot, 22 lacs for the whole Delta), while the neighbouring districts have either retrograded or remained stationary. The average up to the present time in Tanjore is 52½ lacs, being an increase of 22½, and adding to this 1½ lac increase in the other part of the Delta, the increase is 24 lacs, or a quarter of a million per annum in a single district, notwithstanding the abolition of the transit duties.

28. The whole deficiency in the Indian revenue is stated at only one million, so that four additional districts so improved would have adjusted the finances of all India.

2d. It is well known that by far the greater part of the lands have paid no additional tax for those improvements, and the whole of the Mannium lands, perhaps 20 per cent. of the district, have never paid a rupee to this day The large French territory of Carical also has had all the benefit of the new works for nothing.

3d. The saleable value of the lands has increased in an extraordinary degree.

4th The expenditure on these works, deducting cost of repairs, has been perhaps 30 lacs, by a rough calculation, up to the present time.

5th. It is notorious that this district, after paying this comparatively vast revenue, has more wealth in it, in the saleable value of its land and other things, than perhaps all the other districts of the Carnatic put together.

In para 28 the Board think proper to say, "Mr Smollett's figures are found on examination to be correct." They a little further on say, "The years which he selected in his first pamphlet, &c, were open to objection, as not giving a fair comparison" How these two sentences can be reconciled I cannot guess. The Board then give in the margin the series of years taken from the pamphlet, and proceed to point out how three ordinary years had been omitted from the series, and two added which did not belong to it, and which were such years as never occurred before or since, and which consequently would have vitiated the average had they belonged to it They were the two years of the dreadful famine of 1823-24, when Tanjore sold a good crop at enormous prices. Besides this flagrant act, upon which the Board, I am grieved to say, have nothing to say expressive of abhorrence of such a proceeding, there are the following fallacies in the comparison then made:—

1st. This is the "demand," not the collections. I said nothing about the "demand," nor had it anything to do with the matter.

2d It is the demand on account of land revenue; I spoke of the whole revenue of the district. The land revenue alone does not give a true measure of the effect of the improvements.

3d He gives the average of the years after the annicut. I did not say anything about the average of the years. The effects of the works are of course not fully seen at once, nor is the whole of the money spent at once, the comparison can of course only justly be made between the average of years preceding the improvements, and the last year, or the average of the last two or three years.

4th. The enormous land revenue realised in 23 and 24, viz. 43 lacs and 51 lacs, when the ordinary revenue was only about 36 lacs, is one of the strongest possible proofs of the incalculable importance of the irrigation works. There was a district in the very midst of the country visited by a most awful famine, the inhabitants of which, instead of being themselves divided into the two classes—one buying at famine prices, and the other dying by tens of thousands from their inability to buy—are all selling at those enormous prices, and at the same time, instead of adding to the mass of consumers only, are supplying immense quantities of grain to all the surrounding districts, saving the lives of lacs of their inhabitants. This is the effect of the irrigation works exclusively. Mr. Smollett takes these two years, and puts them into a series of years to which they do not belong, in order to give a vicious average of that period, that he may compare it with a following period, in order to show that works of irrigation do not affect the welfare of the country, thus endeavouring to make these years prove exactly the opposite of what they truly show, and most wickedly thereby doing his utmost to prevent the prosecution of works which had thus palpably and notoriously saved millions of people from a calamity, the measure of which cannot be calculated; but of this much we are certain, that had Tanjore been without its irrigation works, another million of people would have been added to those who were consumers only, instead of being suppliers, and that several hundreds of thousands of people additional would have perished. What but overwhelming caste feelings can be supposed to have so blinded faithful and honourable men to pass over without one word of conscientious indignation such an attempt, by means of a garbled return, to propagate a view which, if it could in the present day be adopted, would do such immeasurable mischief? See Appendix (A)

30. The Board endeavour to shelter Mr. Smollett by saying that in a second edition this omission is supplied It is painful to be obliged to point out, that what he did say afterwards, was in consequence of this flagrant proceeding being reprobated in the public papers, and that not one word of defence or apology was given by Mr. Smollett. I must state here that I speak from memory only, for I have failed to obtain a copy of that particular pamphlet at the present time.

31. In the 28th para. the Board say, "Although Mr. Smollett has successfully shown that Colonel Cotton has over-estimated the profits of the general marahmut in Tanjore, &c." I have shown above that there is no ground for this assertion; that the revenue of Tanjore had increased 20 lacs in 50 years, as I have asserted; the average is at present 24 lacs for the whole Delta above what it was in 1800.

32. I give here the revenue of the district of Tanjore according to the Board's returns, with five years' averages, striking out from those averages the three wholly exceptional years, 1800, 1823, and 1824, as they would entirely vitiate averages even of 20 years:

1800 -	- 46½	lacs.
1801 -	- 33	30 lacs.
1802 -	- 27¾	
1803 -	- 24½	
1804 -	- 35	
1805 -	- 33½	36 „
1806 -	- 29¾	
1807 -	- 37¾	
1808 -	- 39¾	
1809 -	- 38¼	
1810 -	- 36	38 lacs.
1811 -	- 35½	
1812 -	- 38	
1813 -	- 41	
1814 -	- 40¾	
1815 -	- 39½	39 „
1816 -	- 39¾	
1817 -	- 39	
1818 -	- 38	
1819 -	- 38½	
1820 -	- 40¾	40¼ lacs.
1821 -	- 39¼	
1822 -	- 41¼	
1823 -	- 52	
1824 -	- 58¾	42½ „
1825 -	- 44½	
1826 -	- 38¾	
1827 -	- 37¼	
1828 -	- 47½	
1829 -	- 43¾	

1830 -	- 43½	45¾ Lacs.	1840 -	- 46¼	46 lacs.	1850 -	- 49	52½ lacs.
1831 -	- 44		1841 -	- 44		1851 -	- 49¼	
1832 -	- 46¾		1842 -	- 46		1852 -	- 49¼	
1833 -	- 48½		1843 -	- 47		1853 -	- 51	
1834 -	- 46		1844 -	- 46		1854 -	- 52¼	
1835 -	- 44½	46¾ „	1845 -	- 51	49 „	1855 -	- 54½	
1836 -	- 46¼		1846 -	- 51½		1856 -	- 58	
1837 -	- 46½		1847 -	- 48¼		1857 -	- 56	
1838 -	- 48		1848 -	- 46¼				
1839 -	- 48¼		1849 -	- 48				

I have given the last average on the whole of the remaining eight years, because the two last years were two of unusually high prices as the first were of unusually low ones.

The difference in Tanjore alone is 22½ lacs, besides 1½ lac in South Aroot, and notwithstanding the abolition of the transit duties, amounting to 1½ lac net.

33 Nobody knows better than the Board do that there is nothing like this in any other district in the Presidency excepting those of the western coast, which are so differently circumstanced that they cannot be compared with the eastern districts. Indeed their improvement is owing to the same cause, with only this difference, that they are generally well supplied with water naturally, while the eastern tracts require it artificially.

34. Nor does anybody know better than the Board, that while this one district alone pays 75 per cent. above its former revenue, it is much better able to pay it than the other districts, or to pay their old revenue, that the increase of revenue is very far from being the measure of the increased wealth and prosperity of the district.

35. In the 27th para the Board speak of the increased saleable value of the lands. They say that the value of land before 1833, was, on an average, about 80 rupees a vayhe, and in 1854, 163 rupees. I have fully ascertained that the latter of these is quite incorrect, and I believe the first to be wrong also. When I got returns at the former period, they gave 160 rupees a vayhe; and, judging from two different returns which I have lately seen, one sent me by the present Collector, but which I have mislaid, and one shown to me by Mr Forbes, which are fully supported by the information I have obtained on the spot, I conclude that the present price is about 340 rupees. I should observe that in both these returns a large quantity of land of small value sold in one talook gave a lower average than this, but if the average of the mean prices in all the talooks is taken, which is undoubtedly the true way of taking it, the present price is as I have stated. Taking the difference at 180 rupees a vayhe, or 27 rupees an acre, and allowing the area of irrigated lands of the whole Delta to be 900,000 acres, including maniem lands, it gives nearly 2½ millions sterling as the increased value of the lands in our possession (besides the French territory), showing distinctly how far the increase of revenue is from being a measure of the effects of the works The money so invested, according to my information, yields six per cent, so that that capital shows an increase of 15 lacs a year to the income of the landowners on the taxed lands only, besides any benefits to the tenants since 1833, that is, during the period that the Board endeavour to show that the district has so little benefited by the irrigation works.

36. Taking the present average value at 340 rupees a vayhe for taxed land, or 50 rupees an acre, it gives 4½ millions sterling for the actual value of those lands, and if we add to that about 25 per cent. in area for the rent-free lands, or 2,25,000 acres, and 85 rupees for price, the capital represented by the average tax of 5 rupees per annum at 6 per cent, the total capital invested in them is two millions, and it makes a total of 6½ millions sterling as the value of irrigated land in Tanjore. Compare this with the state of any unimproved district.

37. How can I conclude this paper without expressing, not my surprise, for I have had too long experience of the strength of caste feelings in the Revenue officers to expect a paper from most of them which is free from conclusions arrived at manifestly under the influence of that bias, but my sorrow to see a body of faithful men, when called upon solemnly by the Government to give a judicial decision upon a vital point in the question of the management of the country, endeavouring as far as possible to shelter this most wicked attempt

to deprive the country of the works upon which not only wealth depends, but life and death. I call it most wicked, for were men of Mr. Smollett's stamp as influential as they wish, they would succeed in depriving India of the only possible means of providing food in what would otherwise be times of famine. The Board know well, that had Tanjore not been irrigated in 1823 and 1824, probably at least a million more of people would have perished in the south, and that had Guntoor been irrigated in 1833, it would have saved at least half a million of lives in the north.

38. They know well that unirrigated land paying one or two rupees an acre, and near an inland market and a port, is unsaleable, while irrigated land cut off entirely from both by want of cheap transit, pays from 5 to 20 rupees an acre and is highly valuable property. They know also that on a large scale land can be provided with these things at an annual expense to Government of a quarter or half rupee. And yet they cannot stand forward conscientiously and heartily to denounce the attempts that are made to deprive the people of those benefits, and as openly support every effort that is made to urge forward these essential measures.

39. It is not the writings of men like Mr. Smollett that do the mischief; he himself is too well known as a man of strong prejudices, and his writings to all but men anxious to be misled answer themselves, but it is such papers as the one now under examination which really supports him that are so mischievous.

40. Here was an opportunity given to the Board to show that they were above all minor feelings, and when called upon, could and would give a manly, conscientious, and unmistakable verdict in a cause so vitally affecting the welfare of millions.

41. There is certainly such a thing as courtesy, but a courtesy which in such critical cases says that nothing is black, nothing white, but everything a little greyish; which makes out that nothing is true, and nothing false, but everything neither, or both, or something between the two, is not courtesy but something else.

42. Mr. Smollett says, "ten years ago * * I applied to the undertaking (the Godavery Delta irrigation) the soubriquet of the 'gigantic swindle;' ten years later, after scrutinising the result in detail, I deliberately assert that the epithet was well deserved." This is the ground taken up by the gentlemen whom the Board endeavour to shelter. Was it too much to expect that a body of conscientious men would in an honest, manly, and conscientious manner express what is most assuredly their real opinion on this point? I know well that every member of the Board knows that this is directly contrary to the true view of the case.

43. They know well that the revenue in Rajahmundry has increased seven lacs, the exports and internal traffic 15 or 20 fold, the produce of the land three or four fold; that not a fifth part of the lands watered yet pay one rupee of tax; that the internal traffic is now carried by the canals at one-tenth of the former cost; that passengers travel at 1 pie a head per mile, &c; they know also well that if these works are supposed to have failed in immensely improving the country, it will greatly tend to deprive other districts of similar incalculable benefits, yet they can write courteously on the subject, and thus identify themselves with the writer of these pamphlets.

44. What I asserted was, "India is like the field after an Indian battle; there is but one cry, water, water: all that is wanted is water, and this want supplied, everything else will almost follow of course. Water for irrigation and water for transit will provide for everything else." Now either this proposition is true or it is not, and Mr. Smollett's proposition, that hydraulic works are a gigantic swindle, is either true or false. Either water for irrigation and transit is the grand means of preserving life and the most effectual way of increasing the wealth of India or it is not; hydraulic works are a "swindle" or they are not The Board, the body to whom is entrusted the material welfare of the Presidency, the lives of 20 millions of people, are called upon by the Government to judge in this case. They know the truth of the case, and they write a long report calculated as far as possible to shelter the party which holds the view they know to be the false one. Can we be surprised if, shortly, gentlemen who brought to a decisive test of this sort utterly fail are set aside and other agents are sought for to carry out God's purposes of

mercy to India, which I, for one, feel fully assured he will find agents to do, however present agency may fail. That India will be irrigated, I have no doubt, notwithstanding outward friends and open enemies.

45 There is one passage in Mr. Smollett's pamphlet which I am surprised that the Board do not notice. It seems to me that they might have heartily supported him in that without any suspicion of their motives, that is, where Mr. Smollett recommends that I should receive a grant of manium land of 2,000 acres in the delta of the Godavery. A gentleman who rents a village there was this year offered by natives 11¼ rupees an acre for the use of some land of his for one crop, and without any permanent right, and they are now his tenants From this circumstance and the ascertained value of produce, about 40 rupees for two crops, it is quite certain that were I in a position to offer land on a permanent tenure, I should find abundance of tenants at 15 rupees an acre, so that 2,000 acres would yield me an income, without investing any capital, of 30,000 rupees or 3,000 *l.* a year. Such a proposal seems to me unexceptionable, and it seems to offer a good opening for the Board to express their further approval of Mr Smollett's views; my only objection to it is, that so far as I am myself concerned, I have been already so much more than amply remunerated for the performance of my pleasant duties.

46 If I might be allowed respectfully to make a suggestion to Government, it would be that they should now call upon the Board of Revenue for their estimate of the cost of cultivating and value of produce of an acre of average dry land, 100 miles from the coast and without water carriage to either an inland market or a port, and the same of an acre of land irrigated from one of the great rivers, and with water carriage to both home and foreign markets, and also the average expense of providing irrigation and water carriage on a large scale. No doubt the Board could easily furnish these, as after writing so many papers on the revenue of the irrigated lands, they must have already satisfied themselves on these fundamental points

A Cotton, Colonel,
Commandant of Engineers

Appendix (B)

STATEMENT showing the Progress of the REVENUE in the Improved Districts as compared with the adjoining ones Unimproved

	Vizagapatam	Averages	Rajahmundry	Averages	Masulipatam	Averages	South Arcot	Averages	Tanjore	Averages	Madura	Averages
	Lacs	*Lacs*	*Lacs*	*Lacs*	*Lacs*	*Lacs*	*Lacs*	*Lacs*	*Lacs*	*Lacs*	*Lacs*	*Lacs*
1836	14¼	13½	23	21¼	13¾	13¾	23½	27	46½	47¼	21¼	22¼
1837	10		21		13¾		26¾		46¼		22	
1838	15¾		21		13½		27¼		48¼		23¼	
1839	15½		21		14		29½		48½		24¼	
1840	15¾		20		13¾		28		46½		23	
1841	15¾	15	22	21¾	13¾	14¼	26	25	44	47	24¼	23¼
1842	15¼		22		13¼		24		46¼		24½	
1843	15¼		22		14		24¾		47		23¼	
1844	14½		20		13¾		24¼		46¾		21¼	
1845	14¼		21		14¼		25¾		51		21¾	
1846	14½	14½	22	23	14	14	29¼	27¼	51½	48¾	21¾	22½
1847	14½		22		13¾		29		48¼		22¾	
1848	14½		21		15		26¼		46½		23	
1849	14¾		21		13¾		23		48		22¼	
1850	14¾		23		13¾		28½		49		23	
1851	15	15	24	25¼	14	14	30¼	27½	49½	53	22½	24
1852	15		25		13½		28¾		51		24¼	
1853	15		24		14¾		25¾		52¼		23¼	
1854	15		25		13¾		23¾		54¼		24½	
1855	15		26		13¾		29¼		58		25	
1856	15¾	-	26½	-	14¾							
Estimated 1857	-	-	28									
Increase	-	-	5¼	-	-	¼ lac		½ lac -	-	5¾	-	1¼
Decrease	-	¼ lac										

Deduct increase in Delta Talooks of South Arcot - - 1½ Add increase in Delta Talooks of South Arcot - 1½

Decrease - - 1 lac

Increase - - - - - - - 7¼ - - 1¼

For the increase in Rajahmundry I deduct the average of the first period not from the average of the last period, but from the last year's actual collections, because it is obvious that when the revenue is regularly and steadily increasing, the latter is the true way of showing the progress

From *J. Goldingham*, Esq., First Member of the Board of Revenue, to *W. H. Bayley*, Esq., Acting Secretary to Government, R. D.

Sir,

Government having been pleased to afford me the perusal of Colonel Cotton's Memo. on my Report, dated 9 July 1855, on the probable results of the Godavery Annicut, I would beg to make the following few remarks:

2. Colonel Cotton naturally expresses much solicitude both as regards the estimation in which the annicut shall be held as a means of developing the resources of the country, as well as the actual results of the work itself. He is under the impression that the value of the work has been underrated by me, and that my report is calculated to discourage the extension of similar projects throughout India. A calm perusal of the report will, I trust, show that there are no grounds for such a conclusion. In para 50, after reviewing what has been realised, I observed that the work had become essentially necessary to the country, and that true policy required that it should be completed and maintained at all times in a state of thorough efficiency. With this feeling of the great importance of the work, I should be glad to find that means had been adopted for enlarging the supply of water, whether by raising the annicut itself, or by another work higher up, or by both.

3. Colonel Cotton occupies a position rarely attained from the many useful works he has projected during a long course of years with a total denial of self, and the really substantial benefits he has conferred by these means both on the Government and the people. It is not going too far to say that lacs of rupees would have been lost to both, but for his talents and devotedness to the cause. It is not likely that the Godavery Annicut will in any way diminish such a reputation, though the money results of that work to Government in the mere form of additions to the land tax, as originally estimated, may not be realised. Colonel Cotton was of opinion that the Godavery Annicut would ultimately bring a clear addition to the revenue of 30 lacs of rupees; the tenor of my report was to show that such magnificent expectations could hardly be realised

4. Colonel Cotton complains of the inadequacy of present returns, and the inadequacy of the prospective estimate as to ultimate effects.

5 The present returns, it is true, do not represent every acre of land that has benefited by the annicut. It seems certain that here and there villages will be found where concealment to a considerable extent has been successfully practised; but such cases do not furnish a standard for estimating the amount of revenue that is withheld in the Delta generally. It is impossible that the Collector could have been imposed upon to the extent alleged. Colonel Cotton makes no allowance for the rule that was considered absolutely necessary of allowing two years of free enjoyment of the water before an additional impost would be imposed. The system of rents also renders it difficult to get at the true state of things. My report throughout, para. 76 particularly, points out that the authorities must be kept in ignorance of the real bearing of the new works as to the occupation of the lands under their influence till the system of settlement shall be reformed. The desired reformation is now commencing, and as it proceeds will clear up all doubts as to what the present returns should be. The survey of a few villages will show but little. Considerable progress must be made in a talook before general conclusions can be safely drawn.

6. Colonel Cotton is equally dissatisfied with the prospective estimate showing the probable ultimate returns, and complains in strong terms of the insufficiency of the rate of increase per acre, viz., 1¼ rupee, which I have assumed. It seems unnecessary to recapitulate the grounds on which this rate of increase was taken. They will be found in paras. 51 to 55 of the report In para. 55 I pointed out that this increase did not represent the entire increase to be expected, which must embrace, besides direct augmented returns, the increase arising from the stability afforded to fluctuating revenue, from a discontinuance of remissions and the cessation of those heavy losses in capital and stock occasioned by inundations which it required years sometimes to replace before the ryot could recover his former position. The increase in sundry sources of revenue, as following an improved state of the country, was also mentioned. As regards

the people at large, the ample supply of food held at their command must not be omitted, I observed, among the advantages derived, a benefit which the district had the good fortune to enjoy so largely during the drought of fusly 1263, A. D. 1853–54.

7. The increase of 1¼ rupee per acre is not the water cess, as Colonel Cotton seems to suppose (Memo. paras 42 and 45), but, as explained in the report, it represents the probable increase per acre on the final re-adjustment of an assessment at present in a very confused state, and in many cases so high as to render an additional impost impracticable.

8 The simple fact that the present land revenue of the district was still considerably below the assets at the time of the zemindary or permanent settlement, notwithstanding the annicut and the outlay of money connected with it, was pointed out in para. 35 of the report, but not as an argument unfavourable to the work, though Government were entitled to expect the full amount of assets irrespective of any extraordinary expenditure.

9. The deterioration experienced in consequence of the decay of the manufactures of the district, did not fall under consideration in my report It will probably be found that the increased and increasing foreign demand for its agricultural products has more than compensated for any loss under that head.

10. Viewed in its main and most important aspect, viz, that of a blessing to all concerned, I see no difference of opinion between the Memo. and the Report. In the matter of direct money returns there is a wide disagreement

11. But the entire question of returns, present and future, is surrendered by Colonel Cotton in p. 47, where he says, " It must, however, be observed that the present population is not equal to the full cultivation of the Delta, even for paddy." Colonel Cotton's views as to the capability of the Godavery Delta are drawn from the circumstances of the Cauvery Delta The population in the former he fixes at three-fourths of a million, while that of the latter is stated to be " nearly or quite two millions." The Godavery Delta, it is added, " will hold three millions, or four times its present population," and considering its advantages over the Cauvery Delta, " could, when filled up in population, pay 100 lacs, or about five times what it has paid without artificial advantages " It appears then that the population of the Godavery Delta must be quadrupled before Colonel Cotton's expectations can be realised Can Colonel Cotton, from the experience of the past, assign a probable period for this consummation? His calculations of increase must remain in abeyance till the conditions on which they are founded are fulfilled

Memo., p 43

Note—These statements of the population do not correspond with the returns in the office of the Board of Revenue, but the argument is in no way affected by this circumstance.

12 In regard to the " artificial advantages " to be acquired by the Delta by means of the annicut, Colonel Cotton should not lose sight of the fact that the waters of the river have flowed through that tract, though uncontrolled, at all times. and that the presence of this water has had its effect in raising permanently the ordinary standard of assessment. And in connexion with this fact, I would call attention to p 61 of the Report, where it is pointed out, as noticed by the Collector of Rajahmundry, that the ryot does not always require annicut water, and that he uses it or not according to circumstances, showing that a command of water is possessed in some seasons irrespective of the annicut. Lands so situated, it is obvious, are not likely to bear much additional cess, notwithstanding that the waters of the river have been brought under complete control.

13. Indications of cane culture are mentioned in para. 44 of the Memo. This commencement of investing capital in this way came incidentally under my notice lately, and I was given to understand that the speculation was likely to turn out well. More capital will doubtless be attracted to the locality if the returns of profit have not been exaggerated. The entire sugar-cane cultivation of the whole Presidency, however, in fusly 1266, A.D. 1856–57, was 32,637 acres, and that of Rajahmundry only 3,275 acres. If, as Colonel Cotton so stoutly maintains, the revenue authorities would not charge for annicut water, how comes it that the sugar-cane cultivation is so small, so much below his expectation of 100,000 acres? I believe and trust it will increase, but if it has not

done so with little or no charge for water, what may be expected from an enhancement of that charge?

14 But a check would be at once imposed on undertakings of this nature if the view enunciated by Colonel Cotton in para. 49 of his Memo. were generally entertained. "A very low assessment," Colonel Cotton thinks, "is decidedly objectionable on general principles." The expression "a very low assessment" is indefinite. There are limits beyond which the assessment cannot be carried consistently with the interests of the ryot, and the exigencies of the State will always prevent its being very low. After paying for outgoings, including the Government assessment and subsistence, the ryot must have a surplus for improvements. Without this both he and his farm, as well as the revenue of Government, must remain in a depressed state. If, in consideration of a heavy tax, Government is called upon to furnish means for improvements, the ryot is reduced to the condition of a tenant at will or a mere workman, and experience shows that work done in this way is the dearest of any. It seems quite necessary that the ryot should have capital of his own, and that he should feel that whatever he may lay out in improvements will be his own.

15 In advocating an assessment not "very low," Colonel Cotton places the ryot of India in the same category with the Pacific islanders and tenants in England. The analogy does not hold good in either case. The state of civilisation and motives to industry widely differ as regards the former, and in the latter the ryot of India is not a mere tenant, but to all intents and purposes owner of the soil, as nothing can prevent his exercising a proprietary power over it, so long as he pays the Government assessment. His tenure is more perfect than the right which it was hoped to create when the permanent settlements of 1802 were made, as it has been subsequently discovered that all that Government could make over to the zemindars under that settlement was their own right, which extended to a certain portion only of the produce of the land. As pointed out at the time by Colonel (Sir Thomas) Munro, if Government were disposed to give up their own revenue, as was done so largely at the settlement in question, the relinquishment should have been in favour of ryots, from among whom a class of substantial men would ere long have sprung up.

16. As regards the effects of a low assessment in leading to idleness and slovenly culture, the case of the enam tenures in India may, I think, be cited as a refutation of that view, and I find it stated that the tithe in England is even found to be a great hindrance to improvement. If Colonel Cotton is right, surely Government have been in error in reducing the assessment of every district, and the simplest plan would be to revert to the heavy assessments of last century.

Adam Smith.

17. As regards conclusions to be drawn from examination of small patches of produce, much caution is necessary, as not only is there a want of uniformity in the different fields of a village, but the capability of different parts of the same field is found frequently to vary. Such examinations, however interesting in themselves, must not be taken for more than they are worth, when the question of assessment is concerned. The adjustment of the assessment is a delicate operation, and much practical experience is necessary in the persons on whom the duty of fixing it may devolve. Colonel Cotton's remarks give the impression that the undertaking is easy, and that having estimates of the capability of the different classes of land, the whole work is, in fact, done. It is far otherwise. There are many disturbing circumstances arising from season, and the want of uniformity in the productive power of fields and tracts throughout, that point out that an estimate of the kind cannot be blindly applied to each field or tract, according to the class under which the assessor may place it. The average produce of each field must be correctly ascertained, and even then experience shows that the assessment cannot be finally fixed, as some correction must be first made to meet disturbing circumstances. "It is the nature of assessments proceeding from single fields to whole districts, and taking each field at its supposed average produce, to make the aggregate sum greater than what can be easily realised." The Collector has to make a further adjustment before a rate per acre can be finally applied to any field. A margin, in fact, to meet

Colonel Munro's Report on the Survey and Assessment of the Ceded Districts, 26th July 1807, p. 6.

meet all circumstances is necessary, and it is here that experience and sound practical views are so much needed.

18. Colonel Cotton glances at the desirableness of requiring the officers of the Department of Public Works to fix the assessment themselves. If, as shown above, matured experience in the particular line is required for this duty, it will hardly be supposed that the Maramut Department, whose habits of mind are chiefly familiar with strictly arithmetical processes, without any revenue knowledge, possess the necessary qualification The whole tenor of Colonel Cotton's arguments show that he would speedily rack-rent every province, and that he could not refrain from making his works pay in this simple manner But Government have already had ample warning of the consequences of erroneous views in fixing the assessment of the country, in the history of the survey and assessment operations of Tanjore, where the Meerassidars of the first talook surveyed and assessed, pointed to the fields which were ready for the sickle, and left the Collector to realise the survey assessment himself without their agency Sheally talook.

19 The question of the assessment of Government has undergone mature consideration recently, and final orders as to the principles which should guide the settlement officer have been laid down by authority The Honourable Court, in Despatch No 17, of 1856, dated 17th December 1856, observe, with reference to the course pursued in the North Western Provinces of Bengal, that the operation of determining the assessment there has been declared to be "not one of arithmetical calculation, but of judgment and sound discretion," and the Court state that they "are well satisfied that absolute accuracy cannot be attained." They go on to observe, that "the main point to be regarded is, that the assessment should be fixed at a rate sufficiently moderate to allow for errors of judgment on the part of the settling officer" From Government, 22d April 1857, No. 372. P 20

20. It seems important that these enlightened views should be borne in mind at all times, and that every tendency to a feeling of increasing the burdens of the people, for fear of their being idle, should be checked

21. I would point out an inconsistency into which Colonel Cotton has been led in p. 57. So long as he is discussing the results of the Godavery Annicut, he expresses himself in strong language as to the false character of the accounts that are put before the revenue authorities, and the readiness with which the authorities in general lend themselves to the statements of their subordinate native officers; but when it is pointed out to Colonel Cotton that in Guntoor higher results have been attained than in Rajahmundry without an annicut or any extra expenditure, his answer is that the revenue of that district had been carried too high The same administrative machinery, and the same means of check exist in both districts, and while their working has been so successful in Guntoor as to go beyond what was required, it will not be supposed that there has been such a complete break down in Rajahmundry as is alleged in the Memo. Report, p. 23.

22 As regards Guntoor, it is quite true that the assessment of some lands was burdensome, and that the poolley tax, which amounted to about 1,00,000 rupees, was a heavy drag upon the ryots. The former has been corrected, and the latter has been entirely relinquished. The consequence is, a higher revenue than before, as has been already reported to Government.

23. The foregoing remarks are intended to embrace the principal features of the question, and are sufficient, perhaps, to lead to a tolerably correct general view of it. To take up the minor points, as discussed in the Memo, would tend to no profit. particularly as the scientific survey now commencing will furnish correctly ascertained facts for data, which are necessarily, as already explained, to some extent conjectural. One point, however, it would be improper to pass over in silence. The increase of revenue already obtained occurs, for the most part, under the Toolia Bagah and Samulcotah Channels; but Colonel Cotton deprives the annicut of any share in producing this increase. "These channels," it is observed in para. 18 of the Memo., "were cut and improved two years before the annicut was begun." This fact, and the admission in para. 13, that much low land in the Delta had been relieved from excess of water by the new works, show that irrigation, to a very considerable extent, Commissioner's Report, para. 25 to 29. Colonel Cotton's Memo, paras. 17, 18, 24.

was enjoyed before the annicut was constructed, and confirm the view put forth in the Report, that a large increase per acre, such as would be obtained under ordinary circumstances when water is newly applied to unirrigated land, was not to be expected in the Delta of the Godavery.

I have, &c.
(signed) *J. Goldingham,*
First Member and late Commissioner,
Northern Circars.

Revenue Board Office, Fort Saint George,
22 May 1858.

From Messrs. *E. Maltby* and *W. H. Bayley* to *T. Pycroft*, Esq., Chief Secretary to Government.

Sir,

HAVING been allowed to peruse Colonel Arthur Cotton's strictures on our Report to Government, of May 1855, on the results of the Coleroon Annicuts, we have the honour to request that the enclosed reply may be submitted to Government.

2. You are probably aware that we were the only members of the Board of Revenue called upon by Government to report on this subject. The report on the Godavery and Kistna Hydraulic Works was reported on separately, by the Commissioner of the Northern Circars.

We have, &c.
Madras, 5 June 1858. (signed) *E. Maltby,*
W. H. Bayley

REPLY to the "Memorandum" of Colonel *A. Cotton*, dated 4th March 1858, impugning the Correctness of the Statements made in the Proceedings of the Board of Revenue, dated 21st May 1855, regarding the Hydraulic and other Public Works in Tanjore.

1. COLONEL A. COTTON, in his book, entitled "Public Works in India," revised edition, March 1854, having made certain statements regarding the results of the Coleroon Annicuts in the Tanjore district, and of the Godavery and Kistnah Annicuts in Rajahmundry and Masulipatam, their accuracy was denied in a pamphlet, dated 1854, written by Mr. Smollett, of the civil service.

2. On the 7th December 1854, the Government called upon the Board of Revenue to test the accuracy of these conflicting statements.

3. At this time the only members of the Board were Messrs. Maltby and Bayley, the senior member being employed on special duty as Commissioner in the Northern Circars. It was therefore by direction of Government that the two former gentlemen undertook to investigate the results of the annicuts in Tanjore; and as the districts of Rajahmundry and Masulipatam had not been under the Board's jurisdiction for five years, the papers connected with the Godavery and Kistna Annicuts were referred to the Commissioner.

4. The two members of the Board submitted their Report to Government on the 15th May 1855, and it is this Report (connected with the Coleroon Annicuts) alone that Colonel A. Cotton deals with in the "Memorandum" now under reply.

Part I. (on General Public Works in Tanjore for 50 years).*

5. It was stated in page 19 of Colonel Cotton's book, and repeated elsewhere,* that Tanjore exhibited "the example of a system of moderate but actual improvement, steadily pursued for 50 years with unvarying success, raising the revenue from 30 to 50 lacs (500,000 *l.*) a year, while the saleable value of the land has equally advanced till it is now (allowing for the difference

---

* Pages 20 and 62.

in the value of money) equal to the value of land in England, all this being accomplished, not by a sudden extensive outlay of capital, producing even temporary difficulty to Government, but by an average annual expenditure of only about 40,000 rupees (4,000 *l.*) a year, besides current expenses, for the repair of existing works." This Mr. Smollett characterised as a delusion (p. 11), and supported his views by tables of revenue for the last 20 and 23 years

6 The Board reported, that on reference to the records it appeared that from A.D. 1800 (when Tanjore was ceded to us) to 1851 inclusive, the sum expended on works of irrigation and communication in Tanjore amounted to 52¼ lacs,* and that in the same period (excluding the first year of all †) the total revenue collections has risen from 31 to 48¼ lacs per annum, or an increase of 17¼ lacs.

7. They then proceeded to consider how much of this was due to the outlay on public works •

8. Colonel Cotton in his "Memorandum" endeavours to show that the Board were grossly in error throughout, and actuated by party feeling He commences with his observations on the question just referred to, and points out first that the Board's estimate of expenditure is for 52 years, whilst he said 50 years.

9. It is to be explained that, though Colonel Cotton did mention a period of 50 years in his book, he gave no table of annual expenditure, or used any dates whatever to show when it commenced or ended, the book was probably written in 1852, and the Board's intention was to compare the outlay from the time of the acquisition of the district, up to 1851, which they supposed ‡ would be the latest date of Colonel Cotton's returns, and then compare the revenue receipts at the beginning and end of the same period. They did not suppose that Colonel Cotton meant strictly 50 years, neither more nor less This would have made 1849 the last year, which did not seem in accordance with views written in 1852 as to the progress of Tanjore, up to that time Even had they taken the years up to 1849 inclusive, they would not have been on the same ground as Colonel Cotton, for he states in his present "Memorandum," para 6, that he omitted the year 1800; but no reference to this omission is made by him in his book The Board were, therefore, left to their own judgment, and believed they were making a comparison which was in accordance with Colonel Cotton's period, and one which would honestly show the actual outlay and the increase of revenue from the time Tanjore came into our possession, up to the date of Colonel Cotton's writing.

10. If, therefore, the years 1800 and 1851 are to be struck out, 3 ¾ lacs must be deducted from the 52 ¼, leaving 48 ½ lacs expended in 50 years.

11. Colonel Cotton then adverts to the 9 ¼ lacs stated by the Board to have been expended on "Roads and Bridges," and included in their outlay estimate of 52 ¼ lacs. He admits that this formed no part of the 20 lacs he mentioned in his book as being the expenditure in Tanjore, and his explanation is as follows —"There is no doubt that the sums expended on roads and bridges ought to be considered. The reason why they are not doubtless was, that they were not entered in the statement that I received "

12 That Colonel Cotton should not have noticed the omission of all works of communication in a statement prepared for the express purpose of showing the results of public works of India, and which contains strong denunciations against the roads of the country, is most extraordinary; and it is still more so when we turn to page 62 of that book, and find him distinctly stating that roads and bridges did form part of his estimate. His words are "Tanjore has been irrigated and drained, and provided with common roads and bridges, at an outlay of 20 lacs (200,000 *l.*) in all (besides repairs), and both the revenue and net income of the people have increased by at least that amount annually."

---

* Irrigation, 43 lacs; roads and bridges, 9¼ lacs.

† *For reasons of which Colonel Cotton does not question the propriety (para 6)*

‡ Colonel Cotton was not in India, and could not be referred to

13 No one has been more severe than Colonel Cotton on others for receiving statements and arguing on them without careful scrutiny, and this confession of carelessness on his part may perhaps be a useful warning to him hereafter.

14 The next objection made in the "Memorandum" to the Board's estimate of outlay is the one no doubt on which Colonel Cotton depends as being fatal to their conclusions; as it is not very clear in the latter part, it will be better to use his own words.

15. "Nothing but a violent bias could induce gentlemen to offer it as their opinion that in calculating the results of works all the cost of repairs for 50 years should be added to the first cost, and the total reckoned as the capital employed. I need not use arguments against so palpable a mistake. Of course I could not say positively what portion of the expenditure was properly capital, and what was for repairs, but when I allowed one-half for each, it was certainly quite sufficiently near to be substantially a true representation of the case, while to charge the repairs as capital was palpably a false view of the matter. Reckoning the total capital at 20 lacs, and the mean during the whole period consequently at 10 lacs, 20 lacs for expenses in 50 years, 40,000 rupees a year, would be 4 per cent. per annum supposing that the whole of this money was spent on the works executed for this capital; but this sum in repairs includes the cost of repairs of all the former works also, and cannot, therefore, be much out of the way."

16. The charge made by Colonel Cotton, though specious in appearance, is not fair. The question before the Board was not as to the total gain in a period of years from a certain amount of capital laid out, but it was as to the increase of revenue on a comparison of one set of years with another half a century subsequently, whereas the expenditure on hydraulic works referred to the whole continuous period.

17. Had it been a question as to the total gain, the Board would of course have sought to make out a more formal account of capital and revenue, as they did in the same report when they came to consider the result of the annicuts constructed in 1836. But the Public Works Accounts of the last half century are far too imperfect to admit of such a process. The difference between the Board's way of putting the case and Colonel Cotton's is simply this. He says the increase of revenue was caused by the expenditure of 20 lacs, besides repairs, and they say (even supposing these works were the sole cause of the increase, which they were not) the expenditure was 48 ½ lacs, including repairs. He speaks parenthetically of repairs without naming the cost; they think it necessary to point out what was the expenditure with their cost, as being better adapted for the information of the public. They had not the means of showing how much was spent on original irrigation works and improvements, and how much on repairs. Colonel Cotton estimates that out of a total, 40 lacs, 20 were spent simply on repairs He admits this is a mere guess, and the Board have every reason to believe that it is an erroneous one, for they are aware that it is usual to use the term repairs where new works would be more appropriate: For instance, the deepening of an existing channel, the widening of existing head sluices, the strengthening of existing masonry works, are often spoken of as repairs, when, in fact, they are improvements or new works. The Board would, therefore, be inclined to estimate at least 30 lacs as capital,* and 10 lacs as *bonâ fide* repairs. But whether their estimate or Colonel Cotton's is nearest the mark, it is evident that there do not exist the means of stating exactly what was the expenditure on new works and improvements and what on repairs, whereas it is known and can be safely asserted what is the total expenditure, viz.,† 40 lacs exclusive of the outlay of 9 lacs on roads.

18. The Board repeat that the question placed before them by Government was simply what is the present revenue compared with what it was 50 years ago, and what sums have been expended by the State on public works. Their reply was that the present revenue is 48 ½ lacs, whereas on first occupying

---

* Out of the 40 spent on works of irrigation

† The statements of expenditure were obtained by the Board from the Department of Public Works, and were prepared by a professional officer.

Tanjore it was 31 lacs, and that the total expenditure on public works within that period had been 52 ¼ lacs. In that reply they perceive neither bias nor error. The only inaccuracy that may be charged against their statement is, that they omitted the cost of the establishment, which has been a permanent annual charge upon the State. If this had been included, another 3 lacs at least would have been added to the expenditure, and its omission certainly does not look like a "violent bias" against Colonel Cotton.

19. In para. 5 of the "Memorandum" Colonel Cotton writes, "The Board again say, it may be assumed that Colonel Cotton alluded not only to the Land Revenue, &c., what can be the use of these insinuations? I expressly say the revenue of Tanjore, not the Land Revenue."

20. The Board take leave to explain that as Mr. Smollett, to whose pamphlet the Government called their attention, all along repudiated the idea of bringing the extra sources of revenue into the calculation, and seemed to argue as if Colonel Cotton had excluded them, they considered it right to point out that the indirect taxes or "extra sources" of revenue, such as those derived from salt, abkarry, stamps, sea customs, &c., were included in Colonel Cotton's estimate of returns, though they themselves were of opinion, for reasons detailed in their report, that it was an erroneous assumption to attribute the increase under these heads of taxation altogether to works of irrigation and communication.

21. In para. 7, Colonel Cotton writes, "The Board then proceed to show that the average of the last five years was 48 lacs, not 50, as I have stated. In the first place, I beg to observe that it was quite unworthy of the Board to argue the matter in this way, because I was evidently speaking in round numbers; and the getting rid of 1 lac at the beginning, and 2 lacs at the end, did not affect the substantial truth of what I was saying."

22. The Board had no intention to criticise, but they had before them a statement carefully prepared from their own records and those of Tanjore, showing the revenue of each year for a long series, and if the total of five years amounted, as it did, to 2,40,65,601 rupees, they could not enter the average of this at 50 lacs when it was 48,13,120 rupees. What unworthy line of argument there is in this they are at a loss to conceive.

23. He proceeds (para. 7), "My statement however was exactly right. First, the Board give the average, not of the last five years of the series of 50 years of which I spoke, but of the 52 years of which they had given the expenditure."

24. Now the fact is, Colonel Cotton never gave any series of years at all. He did not mention a single date in his book which could guide the Board, and he admits (para. 6) that in his 50 years he did not mean the first year, though he gives no clue in his book to such an omission. For want of this definition of what years he alluded to, the Board concluded he spoke in round numbers (which in the beginning of para. 7 he says he did), and naturally, and in good faith, concluded he meant from the time Tanjore came under British rule, to the latest date on which he could have had complete statements wherewith to draw his conclusions, and this was from 1800 to 1851 inclusive, or 52 years. (The subject has been already referred to, in paras. 8 and 9 of this paper.)

25. In para. 8, Colonel Cotton says the fifth closing years he spoke of were 1846 to 1850 inclusive,* the average revenue of which he gives at 49 lacs, after giving his version of the revenue of each one of these five years.

26. The Board will therefore give their version of the revenue collections of these same five years, as compared with Colonel Cotton's, and it is clear that he has entered the revenues of the five years ending with and including 1851, and not 1850. The Board's figures are therefore correct for the years he refers to. This is another of those careless statements on which Colonel Cotton founds his supposed refutation of the results shown in the Board's report.

---

* The "50 years" of Colonel Cotton's book, being 1801 to 1850, both inclusive, as it now appears.

	Colonel Cotton.	Board's Office.
	Lacs.	*Lacs.*
A. D. 1846 - - - -	51	51·46
„ 1847 - - - -	51 ½*	48·24
„ 1848 - - - -	48 ¼	46·30
„ 1849 - - - -	46 ½	47·96
„ 1850 - - - -	48	48·95
Average - - - -	49	48·58

27. So that, even if their former estimate of 48 ¼ lacs is disputed, this gives 48 ½ lacs, and not 49, as Colonel Cotton asserts.

28. Colonel Cotton proceeds to state (para. 9), "The average would thus be 49 lacs, but this average was undoubtedly below the real average revenue of the district at the time, on account of the very low prices of the last three years. The average was at least 50 lacs."

29 Colonel Cotton seems determined to uphold his estimate of 50 lacs. by calculating an average of certain years, and then asserting that this is not the real average. It is true, that prices were low in two out of the five closing years, but on the whole it is as good an average as could have been taken. If not, why did he take it? At all events, if the revenues of five successive years are specified by Colonel Cotton for comparison, it is absurd to say that their mean is not a true average. Surely he could not pick out all the high price years, and take the average of them.

30. Colonel Cotton then goes on to state, what has been the revenue in succeeding years, since his book was written; but this has nothing to do with the question at issue.

31. The Board in their proceedings of 1855, after showing that the whole revenue of the district had increased 17 ¼ lacs, that is, from 31 to 48 ¼ lacs, pointed out that 17 ¾ lacs of this 17¼, was an increase in the revenue from salt, abkary, stamps and sea customs, which they considered could not fairly be said to be the result of works of irrigation and communication; that even in the Sea Customs Revenue, the increase was not in export duties (which Colonel Cotton in para 5 of his "Memorandum" notes as dependent on public works), and that almost all these were taxes newly imposed, after those five first years which had been taken as a period for comparison with the last five years; similar items of taxation, they observed, were at the same time imposed in other districts, and had in like manner, caused a considerable increase in their total revenue, even though no public works had been undertaken. The Board do not doubt but that the result of public works has been to add greatly to the wealth of the country, and thus enable the people better to bear taxation; but they deny the propriety of carrying every rupee of the collections under these heads to the credit of public works. The imposition of a new tax may raise the revenue considerably, without any reference to State or private improvements, as in the case of the Income Tax in Great Britain.

32. The Board not only argued against Colonel Cotton claiming these 7 ¾ lacs from "extra sources," but they also maintained, and gave full reasons for, the following opinion, viz., that the increase in Land Revenue was owing greatly to improved administration. They proved from reference of official papers, that during the first few years, which have been made the period of comparison with the last, the district of Tanjore was so mismanaged, as to call for the direct condemnation and interference of Government. It was a natural consequence that when a regular system of administration was introduced, the revenues of the district would increase. This was a very marked and undeniable case, but Colonel Cotton refrains now from all allusion to it.

33. The Board do not lay to the account of improved management, the whole increase of 31 to 48 ¼ lacs of annual revenue, but they have given their reasons

---

* What Colonel Cotton enters for 1847 belongs to 1846, and so on all through.

for asserting that it can be accounted for without admitting the truth of Colonel Cotton's assertion, that it all arose from the outlay on hydraulic and other public works.

34. To meet the arguments referred to in the preceding paragraphs, Colonel Cotton has nothing more to offer than this (para 12): "I shall not attempt to answer the Board's arguments, that the greater part of the increase cannot be ascribed to the outlay on public works."

35. It may therefore be inferred, that he was unable to meet their statements, for he proceeds to generalise by saying that no one knows better than the Board the effect of irrigation on the produce, and on the wealth of the people, and on the value of the land; and he subjoins a statement of the revenue of Tanjore, as compared with South Arcot and Madura, and another of the revenue of Rajahmundry as compared with Vizagapatam and Masulipatam All this is an evasion of the point at issue, viz. Has the whole increase in the annual revenues of Tanjore (17 ¼ lacs, including salt, abkary, stamps and sea customs), been entirely owing to the outlay on public works, or has it not? Colonel Cotton asserts it has, the Board asserts (and give their reasons, which Colonel Cotton declines to argue upon), that it has not They acknowledge the very great benefits derived from public works, especially those planned and executed by Colonel Cotton, and they have dwelt on them in their report to Government, but they cannot go to the length of endorsing his extreme views.

36 In para. 15, Colonel Cotton notices that the increase in the Tanjore revenue has taken place, notwithstanding a reduction of 1 ½ lac a year, formerly levied as transit duties. He however omits to mention, that at the same time (A D. 1844), the monopoly price of salt was raised from 105 to 120 rupees a garce, and that extra duties were levied in the sea customs in order to meet the deficiency of revenue from the abolition of the transit duties, as was noticed by the Board in para.   of their proceedings of 15th May 1855 The Board, however, as before stated, do not consider that any fluctuations of revenue arising from the imposition or abolition of such a tax as this, are attributable to the construction of hydraulic and other public works.

37 The Board adverted in their proceedings of May 1855, to the fact, that, during the 35 years previous to the construction of the Coleroon annicuts, namely from 1801 to 1836, 30 lacs of rupees were expended on public works, and the annual increase of revenue was 15 lacs, whereas, during the 17 years since the annicuts were built, 20 lacs had been expended, and the revenue had risen only 2 ¼ lacs annually.

38 To this Colonel Cotton replies in para. 17 "On this I beg to remark · 1st. That the increase not being proportioned to the expenditure proves nothing, unless the Board had shown *that additional taxes had been levied* in proportion to the increase of produce, and diminution of the cost of transit. Everybody knows this has not been the case in Tanjore, by far the greater part of the lands that have been so benefited by the annicuts *pay no* additional tax whatever, while on the other hand 1½ lac of extra taxes have been taken off But the benefits of the latter expenditure appear plain enough, in the enormous increase of the saleable value of land of late years. This is the same refuge that has been occupied in the discussion about the results of the works in Rajahmundry The revenue officers determinately refuse to levy the water rate, and then *concealing this fact*, argue that the results of the works are not so great as was expected." (The *italics* are Colonel Cotton's)

39 These remarks will apply more to the question as to the direct result of the Coleroon Annicut constructed in 1836, and will be therefore noticed hereafter (para. 60). It will be sufficient here to state, that if the civil authorities have been remiss in increasing the taxation on the irrigated land, the charge is as true in respect to those who administered the affairs of Tanjore previous to 1836, as to their successors; and the unresolved question remains as before, viz.: How is it that, during the years most money was spent on works of irrigation and communication in Tanjore, the revenues did not increase nearly as much as in the years when the expenditure was much less?

40. The subject was not adverted to by the Board with any view of cavilling

at the outlay on public works, but it struck them on going over the annual accounts of past years, as being a caution against receiving too implicitly the doctrine, that the greater the expenditure on works of irrigation and communication the greater will inevitably be the increase in the revenues of the State

Part II. (on the Coleroon Annicuts).

41. The 2d question discussed by the Board, and on which from being of later date, they were enabled to give a more decided opinion, was the effect of the Coleroon annicuts, Colonel Cotton having stated in page 208 of his book as follows:—"Is it surprising that in Tanjore 1½ million sterling have been added to the saleable value of the land, since the construction of the Coleroon wears? Those works were executed in 1836, and up to the present time there has been expended on them, and on various other improvements in the Delta of Tanjore, perhaps 10 lacs (100,000 *l.* besides the outlay for necessary repairs), and the revenue has increased from 42 to 52 lacs. The increase of value of land has been, so far as I have been able to ascertain, from about 20 rupees an acre, to 40 or 45 rupees, making a difference on 700,000 acres of, at least, 1½ million sterling."

42. The Board, in their proceedings of May 1855, by way of comparing the revenue before and after the annicuts, took the 10 years previous to 1836, and compared them with the 10 years following. The result was an increase from 44 lacs to 47; or 3,10,000 rupees per annum in the total revenues of Tanjore (including 3,000 rupees in extra sources); and another 90,000 rupees increase in the portion of South Arcot, irrigated from these wears, or a total of 4 lacs What portion of this sum is due to the annicuts will be hereafter discussed.

43. But it appears that Colonel Cotton's comparison was made between the five years preceding the annicuts, and the five years ending in A D. 1850: as he did not state in his book what years he took, the Board were left to their own discretion as to the number of years to be taken for comparison. They will, however, now give the result in Colonel Cotton's quinquennial comparison.

44 In para. 18 of his "Memorandum," Colonel Cotton gives the revenue collections from Tanjore for each of the five years preceding the annicuts, and the figures agree with those of the Board's records. The annual average revenue is 46 lacs.

45 The revenue of each of the five years ending in 1850,* has already been given in this paper (para. 26), and the average annual revenue is there shown to be 48½ lacs. This, compared with the five years before the annicuts, gives an annual increase of 3½ lacs only, even including 1 lac for South Arcot, and not 10 lacs, as stated by Colonel Cotton in his book.

46. How does Colonel Cotton attempt to prove the correctness of his 10 lacs in his "Memorandum?" By a method which cannot certainly be considered justifiable. He ignores the quinquennial series preceding the writing of his book (though he had expressly said, as quoted in para. 41 above, "up to the present time.")† and takes five years (1853 to 1857, both inclusive,) after his book was written! during which the revenue of Tanjore received an addition of 1,70,000 rupees a year (in 1852) by a large extent of Pagoda-Maniem land coming into the hands of Government.

47. No real reply has therefore been made to the opinion expressed by the Board, that Colonel Cotton had exaggerated the increase which the revenues have shown, since the construction of the annicuts. That increase consisted not of 10, but of 4 lacs, and a portion of it must be assigned to other causes.

48. It is also to be observed, that although when the revenue declined Colonel Cotton has shown himself alive to the effect of low prices (see *ante*,

---

* The last of Colonel Cotton's 50 years (para 8 of his "Memorandum")

† If the five years ending in 1853 are taken (the last edition of the book being 1854) the results would be still more adverse to Colonel Cotton's assertions.

para. 28), he here claims for the annicuts a temporary increase of revenue, caused by the accident of high prices. In the years subsequent to his book, ending with fusly 1265 (July 1855 to July 1856), to which he now refers, prices ranged unusually high, and the revenue rose accordingly, but the fallacy of attributing this increase to the annicuts will be apparent from the result of the next revenue year, or the recently expired fusly 1266, when prices underwent some decline. The annicuts still furnished irrigation, the irrigated area under cultivation showed a small increase, and yet from prices making some approach to their ordinary level, the annual revenue fell off at once more than four lacs of rupees, as shown in the following statement—

FUSLY	Usual Bazar Price of Second Sort Paddy per Garce, being the Average of 10 Years.	Current Price for these Years.	Irrigated Cultivation	Assessment.	Rate per Acre
	Rs	Rs	Acres	Rs	
1265	74	93	6,98,472	42,87,358	6 2 2
1266		87	7,00,679	38,74,683	6 8 5
			Decrease - -	4,13,675	

These fluctuations of revenue from changes in the price of grain, affect so vitally the question in dispute respecting the annicuts, that the Board took care in their report (of May 1855) to show how, under the Ooloongoo system which prevails in Tanjore, the rate of the tax on irrigated land rises or falls with the price of grain.

50 But in para 22, Colonel Cotton is thus compelled to speak of his own positive and repeated assertions: "I must acknowledge that I have made a mistake in what I said in my book about the increase on the latter years I have said that the revenue had increased from 42 to 52 lacs since the construction of the annicuts. The first average of 42 lacs was not that of the years immediately preceding the annicuts,* but of those preceding the series of great works for properly regulating the supply and distribution of the water. It was in 1828 that I was first ordered to Tanjore," &c.

51 It is not impossible that if the comparison had been made with earlier years, the increase in later years might have been greater, but as Colonel Cotton expressly stated that he reckoned from the years preceding the construction of the annicuts, the Board, of course, followed on the same ground, and they cannot permit him to controvert their statements by shifting the period to years before the annicuts were constructed, when it is their effect that was under consideration. The "mistake" is the more extraordinary since in the very passage in which Colonel Cotton insists on the increase of 42 to 52 lacs, he expressly mentions the year 1836 — *Vide* para. 41 of this paper

52 Here, then, instead of comparing the two quinquennial periods, one immediately before the construction of the annicuts, and the other immediately preceding the writing of his book, Colonel Cotton, to avoid the unpleasant alternative of admitting that his assertions were not borne out by facts when tested by official returns, changes the first into a period some years before the annicuts were built, and the latter into a period subsequent to the writing of his book, and then says, (para. 25), "Allowing for this, the statement I have made of an increase of 10 lacs, is perfectly correct" And, as if the more the blunders the more perfect the accuracy, he says in the very next para, "I have also made a mistake in stating the revenue of Tanjore at 52 lacs, though it had in one year risen to 51½. The average, as I have shown above, was at least 50,† exclusive of abolished taxes." The extraordinary excuse that he offers for his over-estimate

---

* It was 46 lacs, as shown in para 44 of this paper

† The revenue, including extra sources, never reached 50 lacs but four times in 50 years and the two best revenue years in Tanjore were before the annicuts were built.

over-estimate (which he still insists upon is perfectly correct, allowing for errors) is as follows, para 26 :* "I must acknowledge that this passage was carelessly written, but the matter had been examined (?) by me a hundred times, and I had fully assured myself of the truth of what I meant to have said."

53. In para 25, Colonel Cotton states that the Board, in assuming 4 lacs as the increase of revenue from all sources subsequent to the annicuts, do not include that in South Arcot, but it will be seen from para. 42 of this paper, that they did include 90,000 rupees annual increase in South Arcot.

54. The Board, in their proceedings of May 1855, after showing that on comparing the years before and after the annicuts, there was a total increase of revenue of about 4 lacs annually, argued that it is an error to suppose that the whole of this is owing to the annicuts. They observed that the revenue effect of the annicuts must be judged of by the effect on the revenue derived from the lands watered by them, and not by the revenue of the whole district, neither should the increase in the amount derived from the salt, stamps, abkarry, &c ,† be credited to them. Comparing the six years before the completion of the annicuts, with the last seven years up to the date of Colonel Cotton's book, they estimated the annual increase of revenue in Tanjore, from the river-irrigated lands, at 1,77,952 rupees; to which they added 90,000 rupees for South Arcot, making a total of 2,67,952 per annum. From this they deducted 10,419 rupees, the average annual expenditure on repair,‡ leaving 2,57,533 rupees as the net annual revenue, or 41,20,528 in 16 years, or a return of 118 per cent. per annum on the original cost of the works, which was 2,17,389 rupees.

55. The computation thus made of a capital of 2,17,389 rupees against an increase of 2,57,533 rupees, was the best that the materials before the Board enabled them to make. They obtained those materials from the Department of Public Works, and framed their calculation on the same principles as had been followed by the Commissioners on Public Works in making their estimates of the result of hydraulic works. But the Board omitted to make an allowance for the expenditure incurred by Government on account of "Establishment," which would probably amount to a lac of rupees. The result which they exhibited of the gain from the annicuts was, in consequence, over the mark, rather than under, and they cannot be therefore thought to have shown any "bias" against Colonel Cotton.

56. The Board further observed that the good result of the annicut was not limited to this pecuniary advantage, and they referred to the saleable value of land having risen 100 per cent, and to the discontinuance of "remissions" on account of short produce; and even as regards the increase of revenue, they pointed out that in many years, when the revenue fell short, the advantages of the annicuts were peculiarly conspicuous

58. Colonel Cotton does not notice the correction made of his estimate of revenue increase (from 200 per cent per annum to 118 per cent.), but says, (para 27), "I do not go into all the details which the Board dilate upon in the following paras. Though generally intended to show the advantages of the annicuts, all such writing tends to obscure the truth. The broad facts as I have stated them, I beg to say, show the matter in its true light, and leave no possible room for mistake."

59. The Board here leave this part of the discussion, satisfied to place the result of their investigation against Colonel Cotton's "broad facts."

60. The Board must now return to para. 17 of Colonel Cotton's "Memorandum" quoted in para. 38 of this paper, which requires explanation, not so much for Colonel Cotton as for Government. He asserts that the effects on the revenue would have been much greater if a proper additional tax had been levied for the water supplied, but that the revenue officers determinately refuse

---

* It is contained in the "revised Indian edition of March 1854."

† The increase in these "extra sources" of revenue was under 3,000 rupees during this period.

‡ For the mode of calculating the repairs, see para of Board's Report.

to levy the water rate, and then concealing the fact,* argue that the results of the works are not so great as was expected.

61. It has already been shown that an additional revenue of upwards of two lacs of rupees a year has been levied from the lands under the annicuts, and this was of course levied from lands which formerly were not irrigated, but are so now, or else on lands which now yield regularly two crops, instead of one. So much for Colonel Cotton's assertion that by far the greater part of the lands that have been benefited pay no additional tax whatever. It appears from the correspondence which took place when the annicuts were proposed, and in which he himself bore a part, that their object was chiefly to restore the deteriorated irrigation of the District of Tanjore, and, therefore, it was not to be expected that an additional tax was to be levied on lands which were already taxed for an irrigation that had become defective. The subject was not lost sight of by the revenue authorities, and Mr. Kindersley (than whom no man knew Tanjore better), in 1838 distinctly stated, in regard to the annicut, that "its primary object was not to increase, but to keep up the cultivation and revenue, not to convert a desert into a garden, but to prevent a garden becoming a wilderness." There are peculiarities about Tanjore which should be considered, with reference to expectations of obtaining a very great increase of revenue from converting unirrigated land into irrigated, and from making single crop land yield two crops. In the first place, almost the whole area of Tanjore commanded by the river was under irrigation before the annicuts were constructed. Though the annicuts restored what had become deteriorated (chiefly by the silting up of the river Cauvery), it did not effect much (nor was it expected it would) in conveying water to higher levels, so as to bring under its influence lands hitherto unirrigated. Secondly, as regards increase in produce, it is known that the rice cultivation of Tanjore commences with the river freshes of July and August, and is brought to maturity by the rains of the N. E. monsoon in October and November. There is no storing of water in tanks in Tanjore, and when the monsoon is over, there is little or no water available for a second crop.

62. Colonel Cotton seems to think the assessment on the land should have been raised in consequence of the cost of transit being less than it was, but the means of transit in Tanjore are yet very indifferent, and even if it were better the Board of Revenue would (as they think, rightly) object to making this a plea for now enhancing the land assessment.

63. Colonel Cotton also deprecates the non-imposition of an extra tax on the lands held "free" by grants of the former or present Government. It is to be observed that most of these rent-free lands have always been classed as "irrigated," and it would be as unjust to put an extra tax upon them as it would be to enhance the assessment on Government lands of the same classification. There are, no doubt, some rent-free lands which were not irrigated at the time of their gift, but are so now. There has been a discussion as to whether the terms of their grant admit of the imposition of an extra tax for the use of water, and it has eventually been ruled that they are not exempt, and perhaps some 15,000 or 20,000 rupees a year may be realised from them.

64. The next question is with regard to the saleable value of land. The Board in their report to Government pointed out this as a material advantage gained by the annicuts chiefly, and estimated the increase at double, or from 80 to 163 rupees per vaylie (of $6\frac{6}{10}$ acres); and they referred to a case where 138 vaylies were mortgaged for 200 rupees a vaylie. Colonel Cotton, in page 208 of his book, states that the selling value of land has risen from 20 to 40 or 45 rupees an acre, that is, from 132 to 264 or 297 rupees per vaylie; and in para 35 of his "Memorandum" he says, 340 rupees per vaylie.

65. The revenue authorities have no official cognizance of private sales of land, and therefore the Board could not speak so decisively as in matters of revenue account, but their information was chiefly derived from the Report of the Collector, who had been many years in Tanjore, and who had taken the

---

* This imputation is beneath notice.

opportunity of examining several deeds of sale and mortgage. Colonel Cotton states that his information is derived from the present Collector, and also from the same officer as the Board referred to, but as he gives no data or memoranda to prove his statements, the Board must abide by their former estimate.

66. Colonel Cotton then deals with Mr. Smollett, and with the Board's view of that gentleman's pamphlet. Para. 29 of Colonel Cotton's "Memorandum" commences thus: "In para. 28 the Board think proper to say Mr. Smollett's figures are found, on examination, to be correct. They a little further on say, the years which he selected in his first pamphlet were open to objection, as not giving a fair comparison. How these two sentences can be reconciled I cannot guess"

67. There is no intention of reconciling them in the sense of making them express the same thing. Mr. Smollett gave long tables of the revenue of each year, and these were tested by the Board's records, just as Colonel Cotton's would have been, had he given any. This was the first process. They were, as far as they went, found correct; but during the next process, which was to see if they went far enough, they were found deficient, and were condemned as not giving a fair comparison; just as Colonel Cotton's comparative years, taken from a period subsequent to the printing of his book, are now condemned for going too far. Colonel Cotton calls this omission of Mr. Smollett's a "flagrant act, upon which the Board, I am grieved to say, have nothing to say expressive of abhorrence of such a proceeding."

68 In the same para. he continues: "Mr. Smollett endeavours to make these years prove exactly the opposite of what they truly show, and most wickedly thereby doing his utmost to prevent the prosecution of works which had thus palpably and notoriously saved millions of people from a calamity which cannot be calculated" * * * * "what but overwhelming caste feelings can be supposed to have blinded faithful and honourable men to pass over without one word of conscious indignation such an attempt by means of a garbled return to propagate a view which, if it could in the present day be adopted, would do much immeasurable mischief."

69. The Board had before them for consideration Mr. Smollett's revised edition, and that gentleman might very reasonably have objected to expressions of abhorrence at omissions in a table which had been corrected by him. The Board were not bound to notice Mr. Smollett's first edition more than Colonel Cotton's first edition.

70 The Board did not think it necessary in their report to Government to dilate much on Mr. Smollett's version of the Tanjore revenue. They pointed out that his conclusions drawn from the demand instead of the collections of successive years were valueless, and noticed that he argued from the revenues of the whole district, whereas the annicuts only affected a portion of the district, so that his statements were open to the same objections as were made to Colonel Cotton's; and the Board took special pains to show that even a decrease in the revenue did not necessarily tell against the annicuts, inasmuch as in the years when they brought in a very abundant supply of water, and increased the produce and breadth of cultivation, the revenue often diminished in consequence of its being dependent on the price of grain, and they explained these results by annual tabular statements showing what would have been the revenue at ordinary prices. In short, they ignored Mr Smollett's disparagement of public works.

71. The Board certainly did assert, and do now assert, that "Colonel Cotton over-estimated the profits of the general maramut works in Tanjore;" and Colonel Cotton, in paras 31 and 32 of his Memorandum, endeavours to refute this by giving a table of the revenues of Tanjore (including the revenue from salt, stamps, &c) for every year from 1800 to 1857 both inclusive.

72. The Board cannot admit that this table improves Colonel Cotton's case. In the first place, he breaks it up into decennial series, giving the average of each, but omitting to include two of the best years "as they would entirely vitiate the averages." This mode of proceeding is somewhat akin to Mr. Smollett's [illegible] and is, to say the least, a departure from the professed object of

averages, especially when two years, which would tell against what the party wishes to prove, are omitted from the calculation though entered in the table. In the second place, he brings the table up to 1857, or six years later than the date used in his book, and in this way he expects to refute the Board's statements, which of course could only have reference to the period stated in that book. Lastly, as before observed, statements of the revenue of the whole district are not a fair representation of the effects of the annicuts, which only irrigate parts of the district, and to attribute every rupee of increase derived from the salt, stamps, and spirit taxes to improved irrigation is a fallacy.

73. The Board having thus, as they trust, shown that their report of May 1855 was carefully prepared, with a scrupulous desire to arrive at just conclusions, and to point out the full benefits which have resulted from those most valuable works, and having, as they believe, successfully met every one of Colonel Cotton's objections to that report, must leave it to those who will have to dispose finally of the matter to decide whether the following comments of Colonel Cotton in para 39 are justifiable.

74. "How can I conclude this paper without expressing my surprise, for I have had too long experience of the strength of caste feelings in the revenue officers to expect a paper from most of them which is free from conclusions arrived at manifestly under the influence of that bias, but my sorrow to see a body of faithful men when called upon solemnly by the Government to give a judicial decision upon a vital point in the question of the management of the country, endeavouring as far as possible to shelter this most wicked attempt to deprive the country of the works upon which not only wealth depends, but life and death."

75. In para 39, Colonel Cotton says, "Here was an opportunity given to the Board to show that they were above all minor feelings, and when called upon could and would give a manly, conscientious, and unmistakable verdict in a case so vitally affecting the welfare of millions."

76. The Board purposely avoided assuming the position of a judge between two contending parties. They saw that the assertions of neither would stand the test of that investigation which the Government directed them to make, and their report was for the information of Government, and not to enable either pamphleteer to claim the award of accuracy. It was to the instructions of Government and not to the expectations of Messrs Cotton and Smollett that they paid attention, and their instructions were as follows:—'The Board are aware that the correctness of the accounts given by Colonel Cotton in his publication have been impugned, and other writers have argued that the large returns anticipated from the outlay on these works have not been or cannot be realised. It is with a view of clearing up all doubts on this subject, so far as it is possible, that the Government have called for these reports, and it is, therefore, of the utmost importance that their accuracy should be rigidly tested by the Board both in the Revenue and Public Works Department." *

77. The Board cannot but think that any one reading their report will perceive that they have set forth most unreservedly the great success of the works of irrigation in Tanjore, especially the annicuts constructed by Colonel Cotton, but the offence taken by him seems to be that they did not go far enough in their eulogies of him, or their condemnation of his adversary.

78. As to entering into the general subject of the advantage of a liberal outlay on public works, the whole matter had been lately most fully and ably discussed in the First and Second Reports of the Public Works Commissioners, and the Board were not called upon to undertake what would have been a work of supererogation, however much it might have been in accordance with Colonel Cotton's wishes.

79. In para 41, Colonel Cotton refers to Mr Smollett's written assertion that the Godavery Annicut was a "gigantic swindle," and thus proceeds:—"This is the ground taken up by the gentlemen whom the Board endeavour to shelter, was

---

* At this time the Public Works Department was connected with the Board of Revenue.

was it too much to expect that a body of conscientious men would in an honest, manly, and conscientious manner express what is most assuredly their real opinion." * * "They know the truth of the case, and they write a long report calculated as far as possible to shelter the party which holds the view they know to be the false one. Can we be surprised if shortly gentlemen, who brought to a decisive test of this sort, utterly fail, are set aside, and other agents are sought for to carry out God's purposes of mercy to India?"

80 The Board do not know exactly what construction to put on Colonel Cotton's prophecy as to their being set aside; but with regard to this exhibition of petulancy, they have only to observe that the expression used by Mr. Smollett occurs in a pamphlet bearing date 30th June 1856, or more than a year after they had submitted their report. No such expression is to be found in the pamphlet, to which their attention was directed by Government. It was not possible, therefore, that the Board could have seen it, or tacitly admitted its truth.

81. With the same disregard of dates Colonel Cotton says in para. 44, "There is one passage in Mr. Smollett's pamphlet which I am surprised the Board do not notice. It seems to me that they might heartily have supported him in that without any suspicion of their motives, and that is where Mr. Smollett recommends that I should receive a grant of maniem land of 2,000 acres in the Delta of the Godavery." * * "Such a proposal seems to me unexceptionable, and it seems to offer a good opening for the Board to express their further approval of Mr. Smollett's views." However Mr Smollett's ridicule might have provoked Colonel Cotton, it is only necessary to observe as regards the Board's possible view of it that it appears in the pamphlet above referred to which was written a year after the Board's report. Colonel Cotton might, therefore, in this case, as well as the other, have spared himself his remarks.

82. In conclusion, the Board assure Government that they have felt it imperative upon them to correct the mistakes into which Colonel Cotton has fallen regarding their report, but they have returned to the subject with reluctance It is far more satisfactory to them, as their records show, to advocate the cause of hydraulic improvements than to enter into controversies regarding their precise value. The present discussion is, however, not of their seeking, and they must deplore any obstacles which are likely to retard the spread of public works, whether they arise from the attacks of open assailants or from doubts occasioned by the exaggerated statements of over sanguine partisans.

83. With respect to the Coleroon annicuts the Board took pains to prove that those works had yielded to Government a profit of no less than 118 per cent. on the capital expended in their construction, besides rendering the revenue of the Tanjore Delta more secure and adding largely to the wealth and prosperity of that province. Colonel Cotton is so little satisfied with this result as to accuse the Board not of mere inaccuracy, but of an unfair bias and a wish to suppress the truth They, however, feel thorough confidence in the general correctness of their report, and believe that the results noted in it will be considered as sufficiently testifying to Colonel Cotton's skill, and sufficiently encouraging for Government to persevere in improving the irrigation of the country

(signed) *E. Maltby.*

Madras, 5 June 1858. *W. H. Bayley.*

No. 23.

From *G. N. Taylor*, Esq, Acting Collector of South Arcot, to *W. H. Bayley*, Esq, Secretary to Government, Revenue Department, Fort St. George.

Sir,

I HAVE the honour to forward, for submission to Government, a short paper which I have written in correction of certain statements and figures occurring in para 16 of a memorandum published by Colonel Arthur Cotton, on the causes of a recent breach in a branch of the Godavery Annicut.

2 Colonel Cotton's pamphlet is, I believe, an official paper and printed copies have been circulated to public officers in every district of the Presidency. I refrain from entering into any discussion on the subject of which he writes in the paragraph alluded to, but it has appeared to me proper to bring to notice officially the errors into which he has fallen in regard to the revenues of the Sub-division of Rajahmundry.

I have, &c.
(signed) *G. N. Taylor*,
Acting Collector.

South Arcot, Collector's Cutcherry,
Cuddalore, 31 May 1858.

MEMORANDUM.

Colonel Cotton's printed memorandum on the late breach in the Godavery annicut having reached me only within the last few days, I have been unable to take earlier notice of the remarks which he has been led to make regarding the increase of revenue in the Sub-division of Rajahmundry. I have no intention to discuss in this place the merits of the settlement which is called in question by Colonel Cotton, but I desire to correct the erroneous impressions which his observations, evidently written under great misapprehension, are calculated to convey

In para. 16 of the paper in question, after stating that the present officiating Sub-Collector had shown him a letter prohibiting a departure from the terms of my settlement, Colonel Cotton proceeds to say, "as the whole former revenue was only four lacs, this prevents him (Sub-Collector) from levying more than 40,000 rupees." The inference to be drawn from this statement and from the remarks which follow, clearly is, that the former revenue independently of the annicut was four lacs, and that the present revenue is 4,40,000 rupees, and will continue at the latter figure until the survey This, however, is far from being the fact If by former revenue is meant the actual collections realised from the three talooks of the division in former years, the sum of four lacs is rather above the average On referring to official returns in my possession, I find that the average collections for a series of years before the construction of the annicut, amounted to 3,75,000 rupees, and a paper recently received, gives the average of the last five years of the series (fuslies 1251 to 1255) as only 3,55 000 rupees. In the fusly year 1256, when the annicut was commenced, the collections were, however, a little above four lacs, the average of the succeeding six years (fusly 1257 to 1262) was nearly 4½[*] lacs, and the actual collections from the three talooks in each successive year since fusly 1262 have been in round numbers, as follows:

	Rs
Fuslies 1263 - - - - - -	4,73,000
„ 1264 - - - - - -	4,74,000
„ 1265 - - - - - -	5,20,000
„ 1266 - - - - - -	5,44,000
„ 1267 - - - - - -	5,57,000

The collections of the current fusly (1267) are not yet complete, the figures opposite to that year represent the demand. But as the uncollected balance for fuslies 1265-66 was only a few hundred rupees, there can be little doubt that the demand for fusly 1267 will be similarly realised The present revenue therefore is 1,17,000 rupees above the limit supposed by Colonel Cotton

Rs
5,57 000
4,40,000
1,17,000

The settlement to which exception is now taken, was made for fusly 1265, not by an addition of 10 per cent. to the former, but to the present revenue, *i. e.*, the revenue of 1264. It is shown by the above returns that the revenue of the current fusly (1857-58) from the three talooks of the Sub-division is 83,000 rupees in advance of the collections in fusly 1264 (1854-55), 1,10,000 rupees, or nearly 25 per cent., above the average of the six years *immediately following* the commencement of the annicut; 1,82,000 rupees, or nearly 50 per cent, over the average[†] former revenue, and a trifle more than two lacs, or 57 per cent. above the average collections from fusly 1251 to 1255 I am not aware of any error in the above figures, but believe that the records of the Collector's or the Sub-Collector's office, will prove them to be correct.

---

[*] 4,47,000.

[†] 3,75,000.

With respect to the watered area, it is impossible to determine anything with certainty until a survey is made. Colonel Cotton assumes the watered area of the Sub-division to be 200,000 acres, which, according to district accounts, is about equal to the entire culturable ayacut of the three talooks. His estimate is, I think, in excess of the truth; but assuming it to be correct, as the present collections are nearly two lacs of rupees above the former revenue, the increased teervah is at the rate of one rupee per acre. In advocating a survey, I have so repeatedly pointed out the palpable inaccuracy of the present district accounts, that I have no wish to go over this ground again. I suppose, however, that in the absence of more accurate returns, the revenue officers are compelled to accept the talook and village accounts for what they are worth, to check them by all available means, and to assess accordingly. The difficulty of this process can only be properly understood if we attempt to realise the hopeless confusion into which lands, classes, fields, and teervah must inevitably fall where a village has been rented out in common for a number of years. As the joint rents could not be disturbed until the survey, the object of my settlement was to enhance meanwhile the collective demand upon the ryots in a tangible form; and to secure a gradual increase to the revenue, without depending upon doubtful returns of watered area. I am not in a condition to compare the results with other parts of the Delta, where a different course has been pursued, but so far as the circar lands are concerned, I believe the comparison would not be unfavourable to the sub-division.

G. N. Taylor, Sub-Collector of Rajahmundry,
Cuddalore, 29 April 1858. and Acting Collector of South Arcot.

REVENUE DEPARTMENT.

(No. 1108.)

EXTRACT from the Minutes of Consultation, under date the 10th August 1858.

READ the following Papers:—

Proceedings of the Board of Revenue, being the Report of Messrs. Maltby & Bayley on the Coleroon Annicuts	(Here enter 21st May 1855, No. 1325)
Proceedings of Commissioner Northern Circars (Mr Goldingham), being his Report on the Dowlaishwaram and Kistna Annicuts - - - -	(Here enter 9th July 1855, No. 84.)
From Colonel A. Cotton, being his Memorandum on Mr. Goldingham's Report - - - - - - - -	(Here enter 19th September 1857.)
From Colonel A. Cotton, being his Memorandum on Messrs. Maltby & Bayley's Report - - - -	(Here enter 4th March 1858.)
From Mr. Goldingham, reply to Colonel Cotton - - - - - - -	(Here enter 22d May 1858, No. 1250.)
From Messrs. Maltby & Bayley, reply to Colonel Cotton - - - -	(Here enter 5th June 1858, No. 1247.)
From the Sub-Collector of Rajahmundry and Acting Collector of South Arcot - - - - - - -	(Here enter 31st May 1858, No. 23)

Revenue Diary, 12th Dec. 1854, No. 12.
Revenue Diary, 17th April 1855, Nos. 15 and 16.

Para. 1. In the proceedings above recorded, the Board of Revenue and Mr. Goldingham, late Commissioner in the Northern Circars, furnish in compliance with the requisition of Government contained in extract Minutes Consultation 7th December 1854, No 1592, information regarding the effects of the Coleroon Annicuts in Tanjore, and Godavery Annicut in Rajahmundry, on the revenues and prosperity of those districts. The circumstances which led to the call for this information, and the object which the Government had in obtaining it, are stated in the resolution of the above date. It might be here briefly mentioned that the correctness of certain statements made by Colonel Arthur Cotton of the Engineers in his book on Public Works in India, regarding the results obtained and expected from the great works of irrigation on the Godavery, the Cauvery, and the Coleroon, which were planned and executed by him, having been impugned, and certain other writers having also argued that the large returns from the outlay on these works had not been, or could not be realised, the Government were most anxious that the matter should be fully investigated and finally set at rest. An opportunity for this purpose offered itself by the receipt of a report, dated 23d September 1854, from Mr. G. N. Taylor, the Sub-Collector of Rajahmundry then in charge of the district, showing the effects of the Godavery Annicut and its subsidiary works upon the general circumstances of the district; but as this report was unaccompanied by any opinion from the Board of Revenue, the Government resolved on having the statements it contained carefully tested. The Sub-Collector's report and statements, with others that had been received from the officers administering the affairs of the Tanjore and Guntoor districts bearing on the subject of the advantages derived from the annicuts in those districts, were accordingly sent to the Board of Revenue, and the Commissioner of the Northern Circars; the Commissioner to report on the results in the districts under his charge as affected by the Godavery and Kistnah Annicuts, and the two other members of the Board of Revenue upon the results in Tanjore and South Arcot, as affected by the Coleroon Annicuts, for the above purpose; and these authorities were informed that as it was intended to publish all these reports for general information, the Government were very desirous that they should exhibit with the strictest accuracy possible, and with the utmost impartiality, the results of the outlay on these important works.

2. The two reports of the Board and of the Commissioner having been forwarded to Colonel Cotton, have elicited the two papers, dated 19th September 1857 and 4th March 1858, and these again have a rejoinder from the Commissioner (who has now removed his seat at the Board of Revenue), dated 22d May 1858, and another from the two members of the Board who reported on the southern districts. It is not the desire of Government to enter into a discussion of the various, and in some instances, conflicting statements contained in these papers, the matter appears to have gone to a sufficient length, and as any further agitation would lead to an interminable controversy, the Government resolve to direct in pursuance of the intention of the order of the 7th December 1854, that the whole of these papers be printed, and copies of the compilation forwarded for the information of the Honourable Court of Directors, who will thus have the opportunity of forming their own opinion of the value of the different statements.

3. The Government have recently received a communication from Mr. G. N. Taylor from South Arcot, the district to which he now stands appointed Acting Collector, in reply on some remarks reflecting on his management of the Sub-division of Rajahmundry, which appear in a printed pamphlet by Colonel Cotton, and designated a "Memorandum on the late breach in the Murdoor section of the Godavery Annicut." As bearing on one of the points in discussion, the Government resolve to have it printed and submitted to the Honourable Court with the other papers.

4. As regards that part of the discussion which relates to the "area under the influence of the Godavery and Kistnah Annicuts, and the returns which should have been obtained from those works," and regarding which there are no absolute data at present, the Government would remark, that in reviewing on a recent occasion a report furnished by the Acting Collector of Masulipatam, on the effects of the two annicuts on the revenues of that district, the Government resolved on deputing a revenue officer to the two districts of Rajahmundry and Masulipatam, for the special purpose of ascertaining, in communication with the district engineers, the actual area irrigated in a certain number of villages under

Cons. 12th March 1858, Nos. 99, 100, and 101.
Cons. 19th March 1858, No. 45.
Cons. 18th May 1858, Nos. 39 and 40.

under the influence of the annicuts and their increased produce. Mr. Dykes has been directed to undertake this duty, and it is to be hoped that his inquiries will set at rest the disputed point.

(True extract.)

(signed) *T. Pycroft*,
Chief Secretary.

(True copies.)

(signed) *W. T. Thornton*,
Secretary, Public Works Department.

India Office, 14 April 1859.